

TRADE RELATIONS BETWEEN INDIA AND THE ARAB WORLD THE 10TH TO THE 18TH CENTURY

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THIS is to certify that Mr Iftikhar Ahmed Khan has completed his work on his M.Phil. dissertation on "Trade Relations between India and the Arab World, 10th-18th Centuries", and that the work is his own original contribution.

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ABBREVIATIONS

Bib. Nat.	Bibliotheca Nationale, Paris
Ency. of Islam	Encyclopaedia of Islam
IAD	Idarah-i Adabyat-i Dilli
IESHR	Indian Economic and Social History Review
Isl. Cul.	Islamic Culture
JASB	Journal of the Asiatic Society of Bombay
JESHO	Journal of the Economic and Social History of the Orient
JRAS	Journal of the Royal Asiatic Society of Great Britain and Ireland
MIQ	Medieval India Quarterly
OE	Old edition
Proc. IHC	Proceedings of the Indian History Congress

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I

A. THE EARLY ARAB AND ROMAN COMMERCE WITH INDIA

The Arabian Sea trade with India is believed to have begun from the third millenium B.C. when merchants from ancient Dilmun traded with the cities of the Indus Valley. Ships of Ur and Babylon carried Indian cotton goods, drugs and other merchandise to the Mesopotamian regions.[1] European trade with India across the Mediterranean had also to be carried through intermediaries like the Phoenicians, Arabians, Greeks, Egyptians, Syrians, Jews, Armenians, Caucasians, Auxumites and Somalis.[2] The Phoenicians who were a Semetic people, were long active in the Mediterranean. They dominated the western section of the trade routes that on the eastern side passed through the Red Sea

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1. S.C.Belgrave, The Pirate Coast, London, 1966,p.2. Cotton in Sanskrit is sindhu and it is likely the Greek term sinden for cotton is a corruption of the same word. See also Stuart Piggot, Prehistoric India to 1,000 B.C., London, 1961, pp.117, 118; S.M.Wheeler, The Indus Civilization, Cambridge, 1968, pp.81-2. Malabar teak wood found in the ruins of Ur, see K.M. Paniker, A History of Kerala, Annamalai Nagar, 1960,p.1 n.; also P.C. Parasad, Foreign Trade and Commerce in Ancient India, New Delhi, 1977, xi.

2. Haripada Chakraberti, Trade and Commerce of Ancient India (c. 200 B.C. - c. 650 A.D.), Calcutta, 1966, p.2. Phoenicians in the early period were compared to the fish that perished if thrown out of Sea. E.W. Bovill, The Golden Trade of the Moors, London, 1968, p.18; also E.H. Warmington, The Commerce between the Roman Empire and India, Delhi, 1974, p.68.

and the Persian Gulf. This concentration or 'narrowing' of the great commercial pathways between the East and West in the 'Levant' or the 'Fertile - Cresecent' remained a unique feature of world commerce till the rounding up of the Cape of Good Hope offered an additional passage. Upon the decline of the Roman Empire by the fifth century A.D., Byzantium inherited control over this important commerce, since both Egypt (commanding the Red Sea) and Syria (with its entrepots receiving goods from the Persian Gulf) became parts of the Byzantine Empire.

The actual carriers of commerce on the eastern side changed with time. The Red Sea trade was dominated by the Sabaeans of South Arabia. Their fortress of Petra and Wadi Sirhan succumbed to the North Arabian tribes around 320 B.C. and the Minaeoem - Sabaeans were expelled from Dayden having been pushed athwart the main roads joining North-West Arabia to the Mediterranean ports.

The assumption of power by the Homerites in 115 B.C. in South-West Arabia made them natural heirs to this commerce. Despite the very insignificant commercial role of Hazramaut, Catabanea and Gebbanital, oriental wares did reach the Roman territories. The Nabataean Arabs, inhabiting the Suez Peninsula and the North-Western parts of Arabia extended their influence down the Red Sea coast, and as far inland eastward as to Euphrates with their capital at Petra.[1] They conducted trade with the Persian Gulf,

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1. Between the Dead Sea and the Aelanitic Gulf in the Wadi Muza. Wares that Petra received were passed on to the Mediterranean. Warmington, p.11.

with the Sabaeans and with Hazramaut.[1]

Some of the Arab-African merchants of the Somali coast maintained commercial contacts with Gujarat. Their main centres were on 'the Cape of Spices'. They even founded an Abbyssinian kingdom with Axum as the royal Seat and Aulis in the Red Sea as the main port. They were able to prevent Indian traders from penetrating beyond south-east Arabia and the east coast of Africa.[2]

The Arabian Sea trade was controlled in many ways by the monsoons. Before the monsoons had been understood, navigation in the Arabian Sea must have been confined to coastal voyages. The real development of open-sea navigation came only with the 'discovery' of the monsoons said to have been made in the first century of the Christian era.

The secret of the monsoons and its regularity is ascribed to a Greek pilot and merchant Hippalus.[3] Owing to the ignorance

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1. *Ibid*. Agatharchides (113 B.C.) describes Gerrhaeans and Sabaeans as the most well-placed nations because of their strategic position for controlling the commerce which passed between Asia and Europe. See Hadi Hasan, *A History of Persian Navigation*, London, 1928, p. 47. Maqbool Ahmad, *Indo-Arab Relations*, Bombay, 1969, pp.78-9.

2. Warmington, pp. 12-13.

3. *The Periplus of the Erythraean Sea*, tr. W.H.Schoff, Delhi, 1974, p.47, The book is the translation of an annonymous Greek Work that could roughly be related to 50 A.D. to 95 A.D.; Warmington, p.82; R.K.Mookerji, *Indian Shipping*, Orient, 1957, p.86; C.G.F.Simkin, *The Traditional Trade of Asia*, London, 1968, p.22; G.R.Tibbets, *Arab Navigation in the Indian Ocean before the coming of the Portuguese* (being a translation of *Kitab al-Fawa'id fi usul al-bahr wa'l-qawa'id* of Ahmad b. Majid al-Najdi) London, 1971, p.1.

of monsoon winds the Greeks of the Augustan period had to face a number of obstacles from the series of races who controlled the intervening coasts, such as Egyptians, Sabeans and the Gerrhaeans.[1]

But once the monsoons were understood, direct sailing was made possible across the ocean from ports on the east African coast and the Red Sea to the Western coast of India. Such voyages greatly reduced the time taken for transport of goods from one side of the Indian Ocean to the other. For instance the ships could reach Muziris from Ocelis within forty days only.[2]

It was probably the discovery of the monsoons which was responsible for the increase of commerce between the Read Sea and India which Strabo (A.D. 17) notices on the basis of his own observation. He tells us that 120 ships a year left Myos Hormos for India when hardly any one ventured out during the days of the Ptolemies.[3] The information is so striking that one begins to suppose that the discovery of the monsoons must have just preceded the Augustan Age, and is, therefore, earlier than 1st Century A.D.[4]

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1. Warmington, pp.10-11. Cf. Simkin, p. 22.
2. Warmington, pp. 66, 187, 234 et passim.
3. R.C. Majumdar, Classical Accounts of India, Calcutta, 1960, p.284 (translation of extracts from Strabo's Geography).
4. Cf. G.F. Hourani, Arab Seafaring in Ancient and Early Medieval Times, Princeton, 1951, p.84.

Warmington is indeed of opinion that the use of monsoon had been discovered early and then kept secret by the Arabs from the Greeks so as to maintain a monopoly of the Arabian Sea commerce.[1]

The period from 13 B.C. to 96 A.D. witnessed the zenith of Graeco-Roman trade with India. Bt was at this time that Roman Statesmen began to be concerned about the export of precious metal to India in return for such luxury items as muslin. Pliny (69-79 A.D.) assessed the Rome's trade with India at 125,000,000 *dinari* and the outflow for Arabian and Chinese trade at 12,500,000 *dinari*. In Pliny's time one *dinari* had a silver content of 3.1-3.03 grams. The *aureus* had a gold content of 7.3 grams so that the two metals had an exchange ratio of 1:11, as against 1: 27 in 1967.[2] For a vast empire like Rome this was not a big drain but may be said to be substantial. What seems remarkable is the fact that it should be a constant feature of India's overseas trade until modern times that gold and silver should have always flowed in while India exported only commodities.

The Greeks who occupied a premier position in the eastern parts of the Roman Empire were now quite familiar with the various countries of the Indian Ocean area, the markets of

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1. Warmington,p.10. Numismatic evidence suggests that after the discovery of the seasonal character of monsoon there developed extensive trade between the regions of Kerala and Rome. Cf. K.M.Panikar, p.3.

2. Warmington, p. 274; Simkin, pp. 45, 55.

South-West Arabia, East Africa, Ceylon and Bay of Bengal, the mouth of Ganges as far as the 'Golden Chersonese' and to trade even with the port of 'Calligara'.[1]

After 300 A.D. the Roman Empire declined and its coinage depreciated, its Indian trade began to decay. The Greek seatraffic in the Indian Ocean declined correspondingly. There is complete absence of Roman coins in India after Caracalla (212-217 A.D.), suggesting a practical closure of the Roman-Indian commerce.[2]

Partly owing to declining of Roman influence, Abyssinia extended its limit to the Nile and to the Straits of Bab al-Mandab, imposed tribute on chiefs and protected sea-routes of crucial significance for entrepot trade with East and Central Africa. They also took over Yemen and dominated the Red Sea trade.[3]

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1. Hourani, p.35. It was only with the death of Marcus Aurelius in 180 A.D. that the Roman shipping began to decline in the Indian Ocean. J.J.Saunder, A History of Medieval Islam, London, 1972, pp.7-8. Early History of the Deccan, ed. G. Yazdani, London, 1960,p.788; Warmington,p.64.

2. Roman coin inflow into India ceased after Caracalla. Cf. M.Rostovtzeff, Social and Economic History of the Roman Empire, Oxford, 1926, pp.146-49.

3. Cf. Simkin, pp. 54-55.

B. ARABIAN SEA-TRADE FROM THE 6th TO 11th CENTURY

(i) Sixth to 10th Century

The Arabian peoples who had served as carriers and middlemen in the Indian trade with the Mediterranean during the period of the Roman Empire gained much from contacts with India and China,[1] in the east, and Sabea and Egypt in the west.[2] The maritime trade between Egypt and Persia on the one hand and India and the Far East on the other continued to be controlled, in part at least by the Arabs of the Southern Arabian coasts during the post-Roman times. Well before the advent of Islam they had established colonies at all the principal ports of call along the coasts to the mouth of the Indus.[3] Fa-hien in 413 A.D. noticed Sa-po traders in Ceylon who were probably Arabs from the Hazramaut and Oman coasts.[4]

Arab settlements on the Indian shores must have already existed prior to the advent of Islam. But after the advent of Islam the settlements, particularly on the Indian coasts of Malabar and Ceylon, became larger and more numerous.[5]

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1. It is noteworthy that "Arabs" had already established colonies at Canton by 300 A.D. Chau Ju-Kua (His work on the Chinese and Arab Trade in the twelfth and thirteenth Centuries, entitled Chu-fan-Chi), tr. and annot. Friedrich Hirth and D.D.Rockhill, St. Petersberg, 1911,pp.2,4 (Introduction).
2. Hadi Hasan, p.46.
3. M.Hartman cited by Hadi Hasan, pp.123-4.
4. Chau Ju-Kua, p 3 (Introduction).
5. A detailed study on the early Arabs' settlements may be made fro[m] Sulaiman Nadvi's Indo-Arab Relations and his article,"Muslim Colonies in India before the Muslim Conquest",Islamic Culture (Isl.Cul.), July,1934,1935,pp.144-66, 423-42.

Between 410 and 455 A.D. Byzantium (the Eastern Roman Empire) was weakened by barbarian invaders from the north; subsequently, struggle with the Sassanids took its toll. By the beginning of the 5th century A.D. both China and Western Europe were subjected to ravages of barbarian invasions. India's overland trade must naturally have been affected by these developments. However, Egypt was under Byzantine control. Only South India and South China were safe from nomadic invasions with Srivijaya in the process of emergence in South-East Asia.[1]

The author of Christian Topography in the 6th century A.D. comments on the rarity of visits by the Roman merchants at the entrepots of Eastern commerce.[2] Asian trade was by now shared mainly by Arabs, Abyssinians and Iranians.

Trade in spices and other aromatics was controlled by Abyssinians (perhaps including Southern Arabs), while the silk trade was controlled by Persians (perhaps including the Gulf Arabs).[3]

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1. Simkin, p.53.
2. Simkin, p.55.
3. In the period (i.e. 6th century A.D.) Alexandria received very nominal quantities of Chinese silk while bulk of Indian and Chinese wares reached western markets through Iran. Cosmos, The Christian Topography cited by Simkin, p.55. A ransom of 4,000 tunics of silk and 3,000 lbs. of pepper was imposed on Rome by Alaric in the 6th century A.D. Official gifts made by Byzantine envoys to Attila consisted of silk and Indian gums. Ibid,p.57.
   We find Iran enjoying monopoly of silk trade in the 6th century A.D. In 531 A.D. Justinian's request to the Abyssinians to supply it was turned down as they were unable to procure silk from India, where too the silk trade was in the hands of Persian merchants (Hourani,p.42). Rome (later Byzantium) was obliged by treaties in 294 A.D. and 404 A.D. to purchase silk from Iranian Mesopotamia. Ibid., p.55.
   It is significant that Abyssinia and Persia became powerful enough to engage in a contest across the sea for Yemen. That

...contd.

From the establishment of Prophet's power at Medina till the period of Caliph Muawiyah, the Islamic regime could not pay much attention to seafaring and maritime trade.[1] Foreign ships cast anchor in the little Bay of Shuaiba. Occasional voyages can only be cited from the Jiddah coast which replaced Shuaiba as the port in the period of Caliph Usman.[2] Muawiyah (661-80) is said to have been the first Arab ruler to build a navy, but he did so on the Syrian coast.[3]

The mercantile background of the Prophet and the Quraish of Mecca has often been commented upon by historians. Mecca was an important centre of commerce, mainly as a station on the great Indo-Mediterranean sea-cum-land trade-route. We regularly hear of Meccan caravan carrying Indian spices and frankincense to Syria and Byzantium during the Prophet's period. Aden served as the Arabian sea port where products of India, Chinese silks, African slaves and ivory and slaves were purchased by the Meccans

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country was occupied by Abyssinia in 575 and then by the Sassanids. Clearly, the prize here was the Red Sea trade between the Mediterranean and India.

1. Martin Hartman's judgement may be corroborated by Caliph Omar's prohibition of sea-ventures, but not by the Quran or the Prophet's tradition as they do not carry any prohibitory measures to such activity. Martin Hartman in Encyclopaedia of Islam (Ency. of Islam),(O.E.),p.844; also Hadi Hasan,pp.95-6; Hourani, p.54.
2. Ency. of Islam (O.E.), p. 441.
3. Ibn Khaldun, The Muqaddamah, tr. F. Rosenthal, New York, 1958, 2, p.39; Hourani, p.54.

for carriage to the Mediterranean. These commodities fetched a profit of 100%. This trade was maintained even after the rise of the Prophet's power at Medina.[1]

Musk already mentioned in the Christian Topography in the 6th century A.D. still appeared in the western markets during the Arabian epoch.[2]

The Arab Caliphate from the time of Umar onwards brought Egypt and the Fertile Crescent under the control of a single power almost for the first time since Alexander. The immediate result was not helpful to Indo-Mediterranean trade; indeed, Henri Pirenne in his classic Mohammed and Charlemagne speaks of a 'closing of the Western Mediterranean.[3] Though Pirenne's thesis might have been overstated, there does seem to have been a considerable decline in commerce between the western and eastern portions of the Mediterranean, and Alexandria seems to have declined.[4]

But if the trade with Western and Southern Europe decayed, the newly unified Middle East itself offered a vast market for Indian (and Chinese) goods.

The period of Omayyad caliphs (660-749 A.D.) is marked by the expansion of Islamic empire from Spain to Sind. Despite

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1. Ency. of Islam (O.E.), p.440.
2. Warmington, p. 161
3. Henri Piranne, Mohammad and Charlemagne, Meridian Books,p.116 et passim.
4. Bovill, p. 101.

interruptions, the Arab merchants travelled from the Persian Gulf to Canton, driven by the profits to be obtained by bringing goods to the markets of the new empire.[1]

A new impetus to sea trade can be discerned soon after the establishment of the Abbasid dynasty in 750 A.D., particularly with the removal of the capital from Damascus to Baghdad in 762 A.D.[2] For commerce it seemed to mark a shift from the Mediterranean to the Indian Ocean. Goods were conveyed from Baghdad to Basra and Siraf[3] on the Persian Gulf whence they were loaded on ships for India and China.[4]

Arab merchandise could be seen all along the regions of the Indian Ocean as far as China and Korea. In India Daibal in Sind, Thana, Khambayat, Saubarah, Seymur (Jeymur) were the major ports at which Arab ships called. The commerce with Arab Empire thus involved Gujarat, Kathiawar, Konkan, Kolam Mali in Malabar, the Coromandel coast, Cape Comorin, the Andaman and Nicobar Islands and other South-East Asian countries.[5]

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1. Hourani, pp.61-2; Hadi Hasan, pp.102-03, 104.
2. *Ibid*., p.71; also Ashtor, p.71.
3. Siraf was situated at Bandar Tahiri, 27°38' Lat.North. It was destroyed by an earthquake in 977 A.D. S.Maqbool Ahmad, "Arabic Source Materials on Indo-Arab Relations", *Medieval India Quarterly* 1957-58, 3, p.100.
4. *Ibid*. see also Ashtor, p.108. Though trade was carried on with India by the land route, as well, seaborne trade was probably of much greater importance, especially towards the end of the 8th century.
5. Ibn Hauqal (fl.943-77) cited by Sulayman Nadwi, "Commercial Relations of India with Arabia", *Isl.Cul.*, April, 1933, p.286. The port of Tez in Baluchistan was also important. (*Ibid*).

Sea-borne commerce during the classical Abbasid period developed to such an extent that princes of the Muslim countries, besides participating in the foreign trade, owned ships and exported Indian as well as indigenous products to the Maghreb and elsewhere. On the other hand, so far as the maritime trade during the 7th and 8th century in the Mediterranean was concerned, it was almost at a standstill.[1]

The ports on the Arabian coasts from which trade was conducted with Indian ports included Basra, Ubullah,[2] Siraf in south-western Persia, Sohar, Muscat and Oman. Merchant traffic from these ports reached North-Western India along the southern coast of Persia whereas another route through the open sea led to Malabar where Kulam (Quilon) was the destination of most of ships. Voyages from Malabar continued, passing south of Ceylon, then to the Nicobar Islands, and Kalah (Kedah) in Malaysia before reaching Canton in China. With the considerable nautical knowledge and the proper use of monsoons, Arab traders extended their voyages as far as Korea by the middle of the 9th century.[3]

Another maritime route to India was the old Red Sea route. The Nile was connected with the Red Sea by a canal, reopened about 642 A.D. by Amru.[4] Jar during this period gained in significance,

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1. See Pirenne, op.cit.
2. Formerly in the possession of Iranians, it came under the Arab in 635 A.D.
3. Ashtor, p. 108.
4. The canal was ultimately filled with sand and was therefore, abandoned.

particularly because the ships of Abyssinia, Egypt, Aden, India and China anchored in the Red Sea ports.[1] But the Red Sea route seems to have dwindled in importance in the later Abbasid period.

By the mid-9th century Muslim control over the Eastern and Central Mediterranean was firmly established and Byzantine fleet rarely ventured from its home bases. In the Indian Ocean too the Arab supremacy was unchallenged.[2]

The Arab traders were well received in Indian ports. Vallabha Rai of Gujarat is commented by Sulaiman the merchant (849 A.D.) for encouraging Arab traders. Owing to the kind treatment by the ruler of Deccan in the 10th century a great-number of Arabs entered the region. In 'Simur' at the end of the 9th century the Arabs had become so numerous that the Raja deputed an artisan (hunarmand) by the name of Abbas bin Mahan to look after them.[3]

The Indian commodities to the Abbasid empire consisted of luxury products. By the end of the 9th century the volume of India trade also diminished. A revolt and anarchical condition in China in 878 put an end to the Persian and Arab commercial activities in China. Since then they only called at Kalah (Kedah), where the Chinese and Perso-Arab traders met and exchanged

1. Mu'jamul- Buldan as cited by Sulaiman Nadvi, Arabon-ki-Jahazrani, Azamgarh,1935,p.47.
2. Saunder, p. 121.
3. Isl. Cul.,July, 1934,pp. 485-7.

goods. During the same period Siraf is supposed to have played an active role in the Far Eastern trade of the Arab Empire. It replaced Basra as the most important port on the Persian Gulf as is indicated from the stories of seafarers and other writings. Siraf also grew famous for its great wealth. A regular traffic was maintained between all these ports and the trading towns in North-West India, such as Daibul, Seymur, Saubarah etc. The stories of the seafarers of this period frequently refer to travels to Ceylon, Sumatra and Java; but pepper trade with Malabar is seldom mentioned, however.[2]

During the 9th century Oman and other countries sent goods to Siraf and the Fars coast whence they were loaded and shipped to India. Muscat at that time was not of much commercial importance, but the ships touched the harbour for water and provisions. The 10th century Arab traveller, Mas'udi mentions ships of Siraf and Oman who sailed the various seas of the Indian Ocean and to China. During the 12th century the trade of the Persian Gulf with India and China was concentrated at Siraf, though pirates of Kish had affected its original position.

By the 9th century India's seaborne trade seems to have been monopolised by Arab sea-farers. But during the 10th century the monopoly of trade by the Arabs gradually weakened, especially in South-East Asia; and from the 12th century the Chinese,

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1. Ashtor, pp. 147-8.
2. *Ibid.*, pp. 147-8.

availing the opportunity, extended their navigations to the Malabar ports.[1] The change partly reflected the decline of the Abbasid Empire in both political and economic terms.

(ii) 11th Century

As the Abbasid Empire declined, the commercial channels also altered. The 10th century saw the decay of Baghdad and Basra. The main channel of maritime commerce shifted from Iraq and Persian Gulf to Egypt, the Red Sea and the harbours of the Arabian Peninsular. Egypt ceased to be a province of the Abbasid Empire in 969, and it prospered under the Fatimids (to 1171). Fustat in Egypt, though an inland port, prospered and ships called there from the Levant, Byzantine empire and southern Italy. Al-Kindi, a 10th century author in his Fada'il Misr describes Egypt as endowed with all manner of commodities and advantages, as emporium for Mecca and Medina, for Sana, Aden, Oman, Shihr, India, Ceylon, China and many other countries.

During the 11th century the Persian Gulf trade was on the decline, with the shift of trade with India to south Arabia and Egypt. Kirman, however, remained prosperous under the descendents of Qavert. In the last decade of the 11th century and the early 12th, the towns of Kirman (or Bardasir) and Jiruft were centres

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1. L.Gopal, The Economic Life of Northern India, (c. 700-1200), Delhi, 1965, p.122. For early Chinese navigational and maritime activity, see Hirth and Rockhill's Introduction in Chau Ju-Kua (pp. 1-39).

of considerable commerce. There settlements of merchants coming from as far as Byzantium and India.[1] Sohar, the oldest city of Oman on the Persian Gulf, sometime received even Chinese ships.

Thana, according to Ibn Maghribi, a late 12th century author, was so busy busy a commercial centre that its name was frequently on merchants' tongues. Though the population of Thana was of idolators, there was no restriction upon Muslim setting down there.[2]

During the Falimid period the Jews played an important role in Egypt. Trade with India was carried on through the ports of Kus and Aydhab on the Red Sea.

The Jews had a large share in the Indian Ocean commerce. Alberuni (early 11th century) says that a Jew controlled the whole of the pearl fishery in the Persian Gulf. Though Kashmir kept itself closed to all foreigners, Jews also had access to that region as well.[3]

In the 9th century the Jews of Provence (France) were called 'traders on the sea'. They embarked male and female slaves,

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1. B.Lewis, "The Fatimids and the Route to India", Cambridge History of Iran, Cambridge University Press, 1968,5,p.55.

2. Ibn Maghribi (fl. 1189 A.D.) cited by Sulaiman Nadvi, Isl. Cul., July, 1934, p. 488.

3. D.S. Margolioth, "The Renaissance of Islam (Trade)", Isl. Cul., April, 1933, p. 312.

brocade, skins of beavers, from Northern Europe for Egypt, embarked again at Suez, called at the ports of Medinah and Mecca and then sailed to the Persian Gulf, India and China. On their return voyages their freights consisted of musk, aloes, cinnamon, and other oriental goods. They carried the commodities to the Mediterranean. These goods were partly supplied to the Greeks in Constinople partly sold in the capital of the king of Franks. Frequently they travelled by overland routes from Antioch to the Euphrates, proceeding further via Baghdad to the Persian Gulf. They were thus successors to the Syrian traders but were ultimately driven out by the Muslim traders.[1]

During the 10th century a group of Jewish merchants known as Radhnites obtained some prominence. Ibn Khurdadhbih (825-911) says that this group of merchants carried merchandise from Western Europe to the Near East and from China and India to the Mediterranea The Radhnites, by and large, were engaged in luxury trade. Theirs was not a regular trade since they belonged neither to the Christian nor to the Muslim world.[2] Voyages to India were made by Radhnites from Egypt through the Red Sea.[3]

Some information about trade in the Arabian Sea comes from Alberuni. Ceylon was now no more famous for its pearl fisheries.

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1. Ibn al-Faqih (early 10th century), in *Isl.Cul.*, April,1933, p. 310. For further information see a valuable article by Norman A. Stillman, "The Eleventh century Study", *Journal of the Economic and Social History of the Orient* (*JESHO*), April,1973, 16(1), pp. 15-88.

2. Ashtor, p. 106.

3. Ibn Khurdadhbih cited by Ashtor, p.98.

Instead Zanj at Sofala gained its fame for its pearl-banks.[1]

Alberuni remarks that Arab merchants established colonies as early as the Omayyad period in the Green Sea, that is the Indian Ocean in the neighbourhood of the Java Islands and had married native women. From this one obtains corroboration that Arab commerce with South-East Asia was still established.

Saladin, the famous Sultan of Egypt (d.1193) is said to have driven away the 'unbelievers' from the important trade of the Red Sea. This act of his, if true, probably encouraged the further growth of Arab control over the Arabian sea traffic. This led to the rise of the Karimi merchants who were to play a prominent role in the mercantile activity of the Indian Ocean.[2]

Much like Saladin, his nephew, Taqi al-Din Umar also encouraged the Karim merchants. He is said to have constructed a transaction house known as <u>funduk</u> (pl. <u>fanadik</u>) al-Karim at Fustat, the port distict of Cairo. During this period as the Jewish and the Coptic merchants had to quit their commercial activities in the Red Sea, they were replaced by the Karim.[3] The commercial activities of the Karim, according to the Geniza evidence

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1. Al Beruni's India, tr. Edward C. Sachau, Bombay, 1964, 2, p.211.

2. Ashtor, pp. 66-67; S.D.Goitein, "New Light on the Beginnings of the Karim Merchants",<u>JESHO</u>, Leiden, 1958,1,p.175. The term 'Karimi' includes Jewish and Coptic merchants. <u>Ency. of Islam</u> (new ed.), E.J Brill, Leiden, 1978, 4,p.641.

3. Subhi Y. Labib, "Karimi", <u>Ency. of Islam</u> (new ed.),4,p.641.

extended between the Mediterranean and the Indian Ocean during the 11th and 12th centuries.[1] These merchants had their centres in Cairo, Iraq, Palestine, Aden and in Indian ports. In one of the Geniza letters dated February-March, 1134 we find mention of 60 mans of (Indian ?) tabashir[2] together with other presents and commercial commodities being sent to Cairo from Aden. By the beginning of the 12th century the biggest single consignment referred to in the Geniza records from the East,[3] to Egypt, consisted of 60 bales of lac. Its weight was 100 bahar (totalling 30,000 ratl) These were sent by two partners namely Bilal b. Jarir al-Buhadi who afterwards became the vazir and actual ruler of Southern Yemen, and Madmun, the representative of the (Jewish) merchants of Aden. Other oriental goods included costly items of luxuries like spices, drugs, dyeing plants etc.[4]

During the 11th and the 12th centuries the mercantile community on the west coast of India was widely engaged in trade with the Middle East.[5] During the 12th century, Aleppo served as the main emporium for commerce between Europe and Asia. It was

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1. Quoted by S.D. Goitein from his own brilliant article, "From the Mediterranean to India", SPECULUM, Cambridge, 29(2), April, 1954 cited in JESHO, (1), 1958, p.176.
2. Tabashir, bamboo extract used for medicinal purposes, believed to be the product of India. Al-Sharif Al-Adrisi (fl.1150),
3. Presumably the Coromandel coasts and adjacent areas.
4. JESHO, 1958, 1, p.182.
5. Ibid., 1958, 1, p.183.

flooded with goods of all sorts and frequented by Persians, Indians, Armenians and Europeans. In this period the chief port of Aleppo was Scanderone, also known as Escanderuneh. Qus was visited by the merchants from India, the Yemen and Ethiopia.[1] Indian goods including pepper and cinnamon came via Yemen and Aydhab to Qus in large quantities.[2]

Before 1147 the towns on the coasts of the Red Sea, Arabia and India were frequented by merchants from the larger cities of the Muslim west. One of the Geniza letters shows clearly that the merchants from Tunisia, Morocco, Spain and Sicily undertook the long voyage to India and in some instances more than one. All this belongs to the period before 1147.[3]

Aden in the 12th century was a small city, yet strategically of great significance as a 'port of both sea'. From Aden ships sailed to Sind, India and China and Chinese 'dishes' brought to this.[4]

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1. The Travels of Ibn Jubyr (a 12th century chronicle of a Medieval Spanish Moor), tr. R.J.C. Broadhurst, London, 1951, pp.57-8.

2. The Travels of Ibn Jabyr, p.61. Aydhab, according to Madain al-dhahb, was situated Long.68° 40, Lat.21°40', and was a port on the Red Sea, near Suakin. It has been mentioned by Ibn Battuta. Abu'l Fida calls it the rendezuous of pilgrims on Long.58°, Lat.21°. It lay on the shores of the Red Sea. Ibid., p.63. In 1155 commodities of Serandip(Ceylon) like precious stones, spices, pearls were carried to Aydhab.

3. S.D. Goitein, Studies in Islamic History and Institutions, Leiden, 1966, pp. 329-50.

4. Purchas, 9, p.93.

II

ORGANISATION OF ARABIAN SEA COMMERCE 1100 - 1400

A. Merchant Organisation: The Karim

The individual merchant, acting alone, was probably a rare sight in the Arabian-Sea trade. On the other hand, there were various ways of cooperation among merchants. Marco Polo observed a group of merchants who joined together to form partnership and took a large ship specially adopted for the purpose.[1] When capital was provided by a partner, he could legally share profit also.[2] The Geniza papers show Muslims and Jews acting in partnership in undertaking maritime commerce. The larger business and banking houses appear, however, to have been in Muslim hands in Egypt.[3] There were also sleeping partnerships. The Meccan always kept his capital employed by this means.[4] Merchants were also assisted by a fairly developed system of credit and finance found in all the countries bordering upon the Arabian Sea. A rudimentary system of banking existed in the Arab world by the 10th century.[5] Money lenders in Sind and India

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1. Marco Polo, ed. Richard Himble, London, 1975, p. 18
2. Goitein, p. 271.
3. Ibid., p.319. Cf. also Norman A. Stillman, "The Eleventh Century Merchant House of Ibn Aw'kal(A Geniza Study)", JESHO, 16(1),April,1973,pp. 15-88.
4. Ency. of Islam (old Ed.), p. 440.
5. Yaqut, Irshad,(1,p.385) cited by Adam Mez, Renaissance of Islam (Translation from the German), trs. S.Khudabakhsh and D.S. Margolioth, Idarah-i-Adabiyat-Dehli (I.A.D.), Delhi,1979, p.276. An 11th century reference to draft system has been made in Barthold's Iran, p.46.

advanced loans of thousand *dinars* to merchants.[1] Ibn Battuta took a loan from an Iraqi (Iranian) merchant, who went off to Khorasan but upon his return to India claimed his money from Ibn Battuta.[2]

The Karim merchants became an important element in the mercantile life of Egypt and the Red Sea. Their involvement in the Indian trade justifies a brief study of their organisation and operations.

The Karim merchants as a 'rigidly organised professional corporation', do not seem to have attained significance before the 13th century.[3] So far as the first emergence of Karim in Egypt is concerned two different views seems to have been advanced. C.I. Cahen cites Maqrizi's statement relating to the year 1181 A.D. The Karim came from Aden and had been asked to pay duties (*zakat*) for four years.[4] But Goitein argues on the basis of the Geniza papers that the Karims were already commercially active in the Fatimid period. During the 11th and 12th centuries they seem to have been moving from the Mediterranean region to the Indian Ocean with their base at Aden from where they frequented Cairo and Indian ports.[5]

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1. *Ibn Battuta*,(Travels in Asia and Africa: 1325-1354), tr. H.A.R. Gibb, London, 1963, pp. 184-5.
2. *Ibid.*, p. 185
3. Goitein, pp.267-70.
4. Ahmad Ibn Ali Al-Maqrizi, *Kitab al Suluk lema' rifat Dewal al-Muluk*, ed. Mohammed Mustafa Riadh,1(1), Cairo,1956,pp.72-73.
5. Goitein, pp.349, 352, 353. But the term Karim so common in the Mamluk period is not found in the Geniza records in the Fatimid period. *Ibid*., p.358. See also the same author, *JESHO*,1,1958, p.176.

It is possible that the word Karim was originally derived from the Tamil word Karyam (based on the Sanskrit Karya=Persian Kar) meaning work or business affairs.[1] Since the Karim were engaged in trade between Western coast of India and the Middle East, it is not impossible that a general appelation of merchants given to them in South India was carried to Egypt by them as a specific name for themselves.[2]

As noted earlier having extricated the 'unbelievers' from the strategic trade of the Red Sea, Sultan Saladin of Egypt (d. 1193) is said to have encouraged the further growth of Arab control over the Arabian Sea traffic. He encouraged the Karim merchants who henceforth played a prominent role in the mercantile activity of the Indian Ocean.[3] His nephew and deputy in Egypt, Taqi al-Din Umar[4] too followed the same policy towards the Karim merchants. The transaction house known as *funduk* (pl. fanadik) al-Karim at Fustat,[5] the port district of Cairo built on his order bears testimony to it.[6] The expulsion of the Jewish and Coptic merchants from the Red Sea region also furthered the trading operations of the Karim.[7]

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1. Cf. A.L.Basham's view, cited by Goitein in his, *Studies in the Islamic History and Institutions*, *op.cit*. p.350. A rather unlikely interpretation of the term Karim derives it from its literal meaning in Arabic 'Yellow amber'. Al-Qalqashandi's, *Subh al-Asha* cited in *Kitab al-Suluk*, *op.cit*. p.72 *n*.
2. Goitein, p.360. Cf. *JESHO*, 1958, 1, p.183.
3. Ashtor, pp.66-7; *JESHO*, 1958, 1, pp.175-84.
4. *Ency. of Islam* (new ed.), p.641.
5. *Subh-ul-Asha*, Cairo, 1914, 3, p.469.
6. *Ibid*. The text reads: "The merchandise was carried from Qusair to Qus from where it was carried to funduk al-Karim in Fustat".
7. *Ency. of Islam* (new ed.), 4, p.644.

The late 13th century saw the growing dominance of the Karimis in the Middle Eastern countries.[1] They held a monopoly of Egypt's trade with India, East Africa and the Far East. At one time at least two hundred of them were engaged in commerce. They also traded with Damascus, other Syrian towns and Yemen. Yemen was the distributing centre for the goods brought by them from East Africa, India, and the Far East.[2]

The Karim became so wealthy that they were capable of financing the Mamluk state. But the Karimis as an organisation never received legal sanction. They maintained unity only by intermarriages. Their prosperity was also restricted somewhat by the obligations imposed on them by the Mamluk Sultans. Their history is replete with incidents of severe repression, destruction of their merchant houses and the confiscation of their estates.[3]

The organisation of the Karim has its counterpart in the closely-knit caste or community of Hindu merchants in India. Ibn Battuta indeed compares the banyas of Deogir (Daulatabad) to the Karim.[4] We have no specific information about mercantile

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1. The dominance by the Karimis is noticed till the late 15th century. But Dasgupta makes us believe that the Karim, whose shipping was largely handled by the Arabs, owing to the extraction of more and more money presumably by the Mamluk Sultan in the later 15th century, came under serious pressure. He seems to concur with the opinion that Karim vanished completely from the scene as early as the 1470
   A. Dasgupta, "Indian Merchants and the Trade in the Indian Ocean", The Cambridge Economic History of India, ed. Tapan Ray Chaudhuri and Irfan Habib, Cambridge Univ. Press, 1982, 1, p.411
2. Goitein, p. 351.
3. Ibid. p.151; see also Kitab al-Suluk, pp. 72-3.

organisation in Northern and Western India, but guilds of merchants were important in South India.

During the 13th and 14th centuries the merchant guilds in South India were known as Virabalanja - Sumaya or the Ayyavali. Of these, the collector guild or Sankarlu held considerable powers. They collected duties on exports and imports and paid a fixed sum to the government. The privilege of exempting a particular individual from paying (or contributing to) tax was exercised by the merchant guild. Such concession could be a reward for some service done by a person to the guilds.[1]

In so far as the Karim had no charter, relied on informal or even matrimonial relations, they shared common features with the Indian mercantile communities and guilds. To some degree it is not far fetched to suppose that the formation of the Karim group was 'inspired on the Indian model.'[2]

Indeed, when we examine the function of the guilds in South India we find that the amount of authority those guilds held was never enjoyed by the Karimis; nor do we have evidence that the Karim ever were authorised to collect taxes on the government's behalf; nor did they have the discretion to exempt any dealer from paying duty. But on the Indian coasts too, conditions must

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1. Yazdani, p. 684.
2. Cf. A. Appadorai, Economic Conditions in Southern India (1000-1500 A.D.), Madras, 1936, 1, pp. 378-402. See also Goitein, p. 360.

have varied a great deal. It is quite likely that in areas like Gujarat the more individualistic Muslim merchants provided a competing (and complementary) element to the strongly knit Hindu trading communities. Unluckily, the details of their rivalries and relationships evade us.

B. Ship-Owners

A feature of the trade organisation also required the mercantile community either to own ships or hire them. The owners of ships themselves were wealthy merchants whose ships carried cargoes of their own as well as others. During the Fatimid period (10th century), the caliphs and other rulers actively participated in the Mediterranean trade. They built and owned ships.[1] In the 11th century the ship owners in the Middle East were largely Muslims except for a very few Christians. Many ships were owned by the ruling class, such as the sultans, ladies of the ruling houses, governors, generals etc. and by the wealthier merchants. Jews of Aden also owned ships. The prominent Jewish merchants in Cairo were actually termed _nakhoda_ (ship-master) around 1200 A.D. They earned this title apparently because of their participation in navigation on the Indian Ocean.[2]

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1. Ashtor, p.197. cf. G.R.Nariman, _Barthold's Iran_ (tr. from Russian), ed. Minocher E. Dadarwla, Bombay, p.37.

2. S.D.Goitein, 'Mediterranean Trade in the Eleventh Century: Some Facts and Problems', _Studies in the Economic History of the Middle East_, ed. M.A.Cook, London, 1970,p.

Ibn Battuta mentions six ships owned by Nakhoda Ibrahim. Two of these ships were named Jagir and Manurat. There were fifty archers and sixty negro soldiers in the ships.[1] Ships of Raja Koel of Kundapuram sailed to Persia, Yemen and Oman.[2] In the 13th century an Indian merchant Jagadu had a regular trade with Persia, and transported goods in his own ships and had an Indian agent at Hormuz.[3] In Calicut the famous ship owner Mithqal possessed vast wealth and many ships and traded with China, Yemen and Fars.[4] Al-Kazaruni, "the king of merchants in India", seems to have owned many vessels.[5] Afifud Duniya Wa Din Abdul Qasim bin Ali Al-Araji has been described in an Arabic inscription of the reign of Surangadeva (1274-1296 A.D.), found at Junagadh, as 'the prince of shipowners .....'[6] Sultan Samori is said to have had in his possession 13 junks docked in the port of Calicut.[7] The Haravilasam of Srinatha is dedicated to Avachi Tippaya Sethi of Nellore (Vikrama Simhapura), who was a very rich and prosperous merchant. He had his own ships and traded on his own account.[8]

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1. Isl.Cul., October, 1934, p. 601. 2. Ibid., p.602
3. A.K. Majumdar (p.268) cited by R.S. Sharma, op.cit.,p.249.
4. The Rehla of Ibn Battuta (India, Maldive Islands and Ceylon), tr. Mahdi Hasan, Baroda, 1976, p.189; Ibn Battuta, p.235.
5. Ibn Battuta, p. 201.
6. Annual Report of Indian Epigraphy, 1956-57, no.97 cited by S.A.I. Tirmizi, op.cit., p.9.
7. Ibn Battuta, p. 236.
8. S.Krishnaswami Ayyangar, Sources of Vijayanagar History, Madras, 1919, pp. 4,57.

C. Piracy

The Medieval sea-borne trade suffered considerably from piracy. The Kish Island was infested with pirates during the 14th century. They had grown strong to the extent that expeditions were sent to the Zanjibar Coast.[1] A ship carrying Muslim women from Ceylon to Iraq during the period of Hajjaj bin Yusuf (early 8th century) was plundered by pirates based on Sind and Cutch.[2] Piratical activities on the Western Coast of India continued in the subsequent centuries. Marco Polo condemns their depredations.[3] During the 13th century Gujarati pirates became very active. Between Jask and the Indus it a non-man's land where pirates made their home.[4] As protection against the pirates Nakhoda Ibrahim's ships were always equipped with fifty archers and sixty negro soldiers.[5] The Karim merchants during the Fatimid period sought protection against pirates by making contributions to the government.[6] The letters exchanged between India and Aden show ships travelling in convoys during the 12th century for fear of pirates. There is

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1. India and the neighbouring Territories, p.55. Cf. Chau Ju-kua, p. 137.
2. Ahmad Ibn Yahya ibn Jabir al Biladuri, Futuh ul Buldan, tr. Elliot Dowson, The History of India as told by its Historians, Delhi, vol.I, pp.118-19.
3. Marco Polo, The Travels of Marco Polo, ed. Manuel Komroff, [illegible] 1930, pp. [illegible]
4. Sharma, p. 249.
5. R.S.Whiteway, The Rise of Portuguese Power in India(1497-1550), Whitehall Garden, 1899, p.9.
6. Subh al-Asha, 3, p.524; see also Goitein, p.360.

record of a merchant being plundered on his way to India and during his back journey.[1] Sometime danger also befell a merchant when a ship was seized by the governments, which also confiscated the cargo belonging to persons who had connections with the shipowners.[2]

Sultan Qalawin (1279-1290 A.D.) and his successor had enforced very severe rules against pirates and also robbers harassing caravans between Nile and the Red Sea.[3] Basdeo, the Raja of Paknur, is said to have sent thirty ships to fight against sea-pirates.[4] Piracy was rampant on Diu Island much before the Portuguese entered the Indian Ocean. Indicating the location of Diu, Abul Fida (1321 A.D.) says that the inhabitants of the Island were pirates who built their huts from bamboo.[5] Pirates in the Red Sea are said to have burnt ships, killing and robbing passengers.[6]

D. Medium of Exchange

Transactions in Arabian Sea commerce involved not only barter but large exchanges of uncoined metal as well as bewildering variety

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1. Goitein, p. 348.
2. Studies in the Economic History of the Middle East, p.
3. Kitab al-Suluk, 1(2), p.705. See also Ismail Nadvi, Tarikh-ws- Silat ba'inal Hind Wa'l Biladi'l Arabia, Beruit, p.158. Sultan Qalawin seems to have made every effort to safeguard and enhance trade and commerce. Kitab al-Suluk, 1(2), pp.581-2.
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5. Maqbool Ahmad, 'Abo'l-Fida's Description of India', Medieval India-a Quarterly (MIQ), 2(1-2), 1957, p.159.
6. Travels of Ibn Jabyr, p. 52.

of coins. In the Egypto-India trade of the 11th and 12th centuries the payment seems largely to have been made in kind.[1]

A the 13th century author, Chau Ju-Kua speaks of Cairo (the city of Misr) possessing enormous quantities of gold and silver.[2] Margolioth's observation suggests the intermixing of an immense variety of coinage in the sea trade.[3] The orders for Indian goods were accompanied by payments in gold pieces, the international coinage of that period.[4] In the Malaccan ports, Indian coins could be obtained from Indian money-changers.[5] During the 14th century especially gold was required for payment of Indian goods. Quoting Hou Han-shu, Chau Ju-Kua remarks on the use of gold and silver coins by the Indians.[6]

Besides metallic coins, countries of the Indian Ocean also used cowries. Cowries were the particular export of the Maldive Islands.[7] Hou Han-shu and Huang-tsang observed Indians using cowries as the medium of exchange.[8] In Bengal Ibn Battuta witnessed cowry shells being exchanged for rice. The Yamenites used them as ballast in their ships.[9]

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1. Goitein, 'Mediterranean to India' cf. Simkin, p.46.
2. Chau Ju-Kua, p. 116.
3. Isl. Cul., April, 1933, p. 309.
4. Goitein, p. 342.
5. Mrs. Meilink Roelofsz, 'Trade and Islam in the Malay-Indonesian Archipelago', Islam and the Trade of Asia, ed. D.S.Richard, Oxford, 1970, p.151.
6. Chau Ju-Kua, p.113 n. See also Thomas Watters, Yuan Chwang's Travels in India, Delhi, 1961, p. 178.
7. India and the Neighbouring Territories, p. 155.
8. Chau Ju-Kua, p. 113 n.
9. Ibn Battuta, p. 243.

As to the rate of exchange we have some scattered references contained in travellers' accounts. The Hou Han-shu records the gold-silver ratio as 10: 1.[1]

The rate of exchange at Maldive Island was 400,000 cowries against 1 gold *dinar*, often falling to 1,200,000 to the *dinar*.[2]

E. State and Sea-borne Commerce: Taxation

Merchants trading from the Arabian Sea ports suffered considerably from heavy taxation. Besides various tolls in Iraq and imports on the trade in Syria were vexatious enough to make Muqaddasi complain in the 10th century. The customs amounted to more than 10% of the value of the goods taxed. Compulsory loans, heavy fines, forced purchases of goods at higher prices fixed by the authorities were common; and sometimes even the merchants' stores were plundered by the soldiery.[3] In some cases the government made trade a state monopoly. For instance Toghtekin, the prince of Yemen by the end of the 11th century monopolised the Indian trade.[4]

Ibn Jabyr (late 12th century) noticed in upper Egypt a

1. Chau Ju-Kua, p. 113 n.
2. Ibn Battuta, p. 243.
3. Ashtor, p.149. cf. K.M.Ashraf, *Life and Conditions of the People of Hindustan*, Delhi, 1959,p.137.
4. Ashtor, p. 175.

a group of tax-collectors, carrying in their hands long pointed prods with handles, getting aboard the ships to examine the goods coined by them; in order to locate taxable provisions, goods or money.[1]

In the reign of Saladin of Egypt in 1183 the Karim merchants who had come from Aden to settle in Egypt were made to pay a compulsory tax to the Egyptian government for four years.[2] By the 13th century Aden's significance was on the decline owing to the unbearable taxation imposed on foreign merchants. By the 2nd half of the 15th century Aden had already lost its commercial position.[3]

A detailed description of the functioning of the customs procedure in Egypt has been given by Jonathan Riley. By the normal routine in the Egyptian harbour during the mid-13th centary the captain of a ship was required to pay a tax for exchange.[4] A port-tax was also levied on each ship. It was known as _anchoragia_, and did not vary according to the ship's size.[5] The goods once disembarked were subjected to inspection, and a tax was fixed upon them according to the estimated value thereof.[6] But payment

1. _The Travels of Ibn Jabyr_, _op.cit._, p.56.
2. But according to Goitein for several years, Goitein, p.352; also _JESHO_, 1958, 1, p.175.
3. Ismail Nadvi, p. 143.
4. Jonathan Riley-Smith, 'Government in Latin Syria and the commercial privileges of Foreign Merchants', _Relations between East and West in Middle Ages_, ed. Derek Baker, Edinburgh, 1973, p.112.
5. J. Riley-Smith, p. 112.
6. _Ibid_.

of the customs, as a rule, was only required to be paid when the commodities were already sold.[1]

In 997 A.D. the Fatimid Caliph Hakim Be-Amrallah exempted the sailors of the Red Sea from taxes on ships and boats.[2]

For the other side of the Arabian Sea we have varied kinds of information. Sunkamu was a term for various kinds of taxes and customs on merchandise in the 13th-14th century Eastern Deccan. It was a fixed sum payable to the government by the merchant guilds. The tax-farmers in different localities, had their own offices, accounts and records of transaction. The tax collectors were known as Sunkaruly and their accounts Sunka-Karanaly. The duty collected was called pemta sunkamu or magama. While these collectors were free to manage their own affairs; they were held responsible for paying the government share. They were free from government influence or its officials. Evidence of this fact is borne out by two copper plates corresponding to the years 1304 and 1322 A.D.[3]

Chau Ju-Kua (13th century) mentions heavy taxes and imports in the Chola Dominion. Owing to this, merchants were reluctant to go there.[4] In the 14th century the merchants who were dependent mostly on maritime commerce paid a fixed sum annually

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1. J.Riley-Smith, p.112.
2. Taqi-El-Din Ahmad Ali Ibn Abd-el-Wadir Ibn Muhamad El-Maqrizi, (1364-1442 A.D.), Kitab El-Mawaiz Wal-Itibar Fi Dhikr El-Khitat Wal-Athar, ed. M. Gaston Wiet(Memoirs published by the members of the Institute of French Oriental Archaeology of Cairo), Cairo, 1911, 2, p.35.
3. G. Yazdani, p. 684.
4. Chau Ju-Kua, p. 95.

to Sultan Jalaluddin of Ma'bar through fear of his sea-power.[1] At Khusru Abad in Multan the goods and the baggage of all people crossing the river was strictly checked. In 1333 A.D. the tax on imported commodities amounted to as high as a quarter of the value. For every horse 7 dinars had to be paid by the traders.[2] During the reign of Bahadur Shah (1526-1537) of Gujarat a band of Khurasani merchants had to pay 6,000 rupees as customs duty to the ports of Gujarat in a single trip.[3]

Heavy taxation by the state was compensated to some extent by some amount of state assistance to merchants who lost their goods in sea commerce.

After the murder of Al-Kazaruni, the 'King of merchants', his companion Shihabuddin was lucky to escape with his life when the Sultan of Egypt came to know of the episode he ordered 30,000 dinars to be paid to Shahabuddin and three ships made ready for his journey with complete equipment and full pay and provision of the crew.[4] But on the other hand, the custom also prevailed in Malabar that when a ship was wrecked all that it contained went to the royal treasury.[5]

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1. Ibn Battuta, pp. 230-31
2. Ibid., p. 188.
3. Tirmizi, p. 10.
4. [illegible]; Rehla, pp. 67-8. But afterwards the amount given to Shihabuddin by an order of the king to cheer him up was increased to 'one lac of gold tankas'. Rehla, p.68.
5. Ibn Battuta

III

INDIAN EXPORT TO THE ISLAMIC WORLD BEFORE THE OPENING OF THE CAPE ROUTE

The main feature of India's trade with the Islamic and other countries during early Medieval time is said to have been that India exported species, herbs and drugs and in exchange obtained gold and silver.[1] This is not of course entirely true; India also exported iron and steel besides cloth, indigo and other merchandises.[2] In this chapter we shall first examine major commodities of export from Indian indicated in the sources.

Indian herbs owing to their medicinal uses and wide range of effectiveness[3] had won great appreciation in the world markets. The authors of the <u>Kitab-ul Abnia</u> and <u>Maketibat-i Rashidi</u> were so impressed by Indian herbs and medicines that they offer a large amount of interesting information on them. Rashiduddin carefully issued orders for purchase of the Indian herbs and drugs.[4]

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1. Fazlullah bin Abdullah Shirazi 'Wassaf', <u>Tarikh-i Wassaf</u>, Bombay, 1261 A.H., pp.184-85. The term <u>Khas-o Khashak</u> (lit. Straw and grasses) means spices, herbs and drugs. See also Al-Umari, <u>Masalik al-Absar fi Mamalik al-Amsar</u> tr. I.H.Siddiqi and Qazi Muhammad Ahmad, Aligarh, 1971,p.61; <u>Purchas</u>, 10,p.2; Hou Han-Shu cited in <u>Chau-Ju-Kua</u>,p.113; Simkin, p.46.

2. I.P. Petrushevsk in <u>Cambridge History of Iran</u>,5, pp.501-2.

3. Abu Mansoor Ali Harvi (11th century), <u>Kitab-ul Abnia</u>, Tehran, 1163 A.H., pp.4-5. Abu Mansoor so much admired Indian herbs and drugs that he exclaimed, "I have taken the path of the Indian sages".

4. <u>Kitab-ul Abnia</u>, pp. 4-5; <u>Maketibat-i Rashidi</u> (a collection of letters of Rashiduddin Fazlullah) ed. Mohammad Shafi, Lahore, 1945, pp. 197, 278-9; 284-86, 327 etc. See also Alberuni, <u>Kitab-us Sadna</u> (comp. 1025 A.D.) Eng. ed. Karachi, 1973, pp. 234-5, 260 etc.

Among odoriferous plants for medical use aloe-wood was found in abundant quantities in India. Alberuni differentiates regional varities of the wood. He records the tradition that the rulers of India sent as presents to the Sasanian ruler Anusherwan (6th century) one thousand mans of 'Ud' (aloe-wood).[1] In his 21st letter the Il-Khanid minister Rashiduddin (early 14th century) orders his son to purchase among other things, one hundred *mans* of Indian aloe-wood.[2]

Alberuni in his *Kitab-us Sadna* mentions the following varities of aloes :

(1) *Ud-i-Hindi*: Also called *ud-i- Bengali*[3] of the most excellent quality being black, heavy and greasy.

(2) Sanafi aloe-wood: More bitter than the first. Of black colour stinged with yellow; very fragrant.[4]

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1. *Kitab-ul Jamahir fi Ma'rifat'il-Jawahir*, Alberuni, Hyderabad, 1355 A.H.,p.71. For other references on Indian aloe-wood, *India and the Neighbouring Territories*, pp.27,36,64,101; Sulaiman Nadvi, Commercial Relations of India with Arabia, *Isl.Cul.*, April,1933, p.202 et passim. *Travels of Ibn Jubyr*, p.116; K.S.Lal, *Twilight of the Sultanate*, Calcutta, 1963, p.281.

2. *Makatibat-i Rashidi*,p.197. The same quantity of aloe-wood has been mentioned in letter no.34 and in the list of herbs and drugs sent by Alauddin Khalji to Rashiduddin Fazlullah for use of the hospital established by the same Vazir at Tabriz.

3. Cf. India and the Neighbouring Territories, p.101. See also Qasim Abdullah Kashani, *Arais-ul Jawahir wa nafais-ul Ataib*, Tehran, 1345 A.H., pp.258-9. According to the latter Bengali and Sanafi spieces of aloe-wood are brought from China (*Ibid.*, pp. 258-9) which seems to be misleading. If the Hindi attribution with the Bengali aloe-wood is corroborated it seems quite reasonable that both the products were of the same variety. *Kitab-us Sadna*,p.234.

4. Cf. *Arais-ul Jawahir*, pp. 257-9. *Ud-i Asfi* seems to be an erroneous reading in the orginal text for *sanfi* aloe-wood but *zaifi* aloe, aloe-wood grown in Zaif could be possible.

(3) Sanafiri: Inferior to the first one.[1]

(4) Qumari:[2] Procured from Khamer; light, somewhat whitish and greasy, used in medicinal confection.

(5) Chandrarani: Inferior to Qumari.

(6) Ashfah: Heavy, black and not very fragrant.

(7) Batuk: also called _bad-bizani_; like the jointed bark of the date fruit from which fans were made.[3]

The best variety of aloe-wood was recognised to be the Indian one. It was also known as Samudri.[4] Its peculiarity is that it mixes completely with musk and amber. About one _man_ of this incense fetched three hundred _dinars_. According to the author of _Arais-ul Jawahir_ the price of one _man_ of the best aloe- wood was 180 _dinars_.[6] These were presumably prices obtained in the Islamic world.

Sandal Wood :

Among varieties of medicinal plants like aloe-wood, almug wood, bamboo, ebony wood,[7] slikha,[8] brazil wood, southern wood, sandal wood

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1. _Kitab-us Sadna_, p. 234.
2. _India and the Neighbouring Territories_, p.97; _Kitab-uz Zakhair Wat'tahaif_ cited in _Hindustan Arabon ki Nazar men_ (Urdu), Azamgarh, 1962, p.66.
3. Note: All the varieties of aloe-wood referred above have been mentioned by Alberuni in his _Kitab-us Sadna_, pp.234-5,260 et passi[m]
4. _India and the Neighbouring Territories_, pp.97,101,128. The Samunda[ri] aloe-wood was not the product of Samundar(?) but was brought from Kamrupa in Assam. _Ibid_., p.128. Another source of later period, however, confirms that Kamrupa produced the best aloe-wood(_ud-i khub_). Cf. Muhammad Kazim, _Alamgir Nama_, Calcutta, 1968, p.724.
5. _Kitab-us Sadna_, p.235.
6. _Arais-ul Jawahir_, p. 260.
7. It is also known as black wood. Simkin, p.39.
8. _Arais-ul Jawahir_, p.313. According to the author _salikha_ is a bark of a tree found in India. Steingass, s.v.(_salikha_).

was a permanent feature of export. According to the author of Arais-ul Jawahir, sandal wood had many varieties, the best being whitish and possessed of delicate fragrance.[1] All kinds of sandal wood grew in India.[2] One of the varieties that seems to have been greatly in use for medicinal purposes was maqasiri, mentioned in Makatibat-i Rashidi and Arais-ul Jawahir.[3] In his description of ma'bar 'Wassaf' mentions sandal wood among its major exports.[4] Sandal wood grown in Malabar was far more superior to the sandal grown in other regions.[5] Beside India, sandal wood also grew in Eastern Java, that is the region of Moluccas.[6] According to Yazdani Mysore produced abundant quantity of sandal, teak and ebony wood which were exported to West Asian country from very early times.[7] Among other aromatic wood sandal wood was brought to Baghdad for sale at the end of the 13th century.[8]

Darchini, Cardamom and Cubebai

Darchini, Cardamom and cinamon are widely used in medicinal drugs. Idrisi says that in the north of Fandarayna in Thana

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1. Arais-ul Jawahir, p.267.
2. Ibid., p. 267.
3. Makatibat-i Rashidi, p. 197
4. Tarikh-i Wassaf, p.300.
5. Chau Ju-Kua, p. 209.
6. Ebid.
7. Yazdani, op.cit., p.310.
8. Chau Ju-Kua, p.209

there was a big mountain at the foot of which grew cardamom that was exported all over the world.[1] The author of Subh-ul Asha describing the landscape of India says, "in their mountain and islands there grow the trees of aloe-wood, and camphor and all sorts of aromatic plants, for example clove tree, spikenard, darchini, cinamon, salikha, cardamom, cubebs, mace and many kinds of drugs of vegetable origins, and they have musk deer and civet cat."[2] Cinnamon grew in large quantities in Malabar, Quilon and Maldive Islands.[3] The presents by Sultan Alauddin to Rashiduddin Fazlullah also contained 200 hundred mans of cubebs, and 200 mans of darchini.[4]

Pepper :

Indian round pepper was a great item in the spice trade. Cultivation of pepper for commercial purposes was prevalent on the coasts of Malabar while the ports of Masulipatam and Calicut were its great emporia. Genoese merchants who traded at Masulipatam since as early as 1224 A.D. through the help of the Indian merchants obtained large supplies of pepper.[5]

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1. India and the Neighbouring Territories, p.63
2. Tuhfat-ul Albab cited in Subh-ul Asha, tr. Otto Spies (undated) p.7; see also Ibid., pp.27-8. The author died in 1197 A.D. He was a famous traveller and geographer of his time.
3. Ibn Battuta, pp. 238, 254, 273; Chau Ju-Kua,p. 209.
4. Makatibat-i Rashidi, p. 278-9.
5. Owen C.Kail, 'Dutch Commercial and Territorial Influence in India', Journal of the Asiatic Society of Bombay, (JASB), 1968-69, 43-44, p. 179.

In one of the portions of the Geniza records on Indian trade collected by S.D. Goitein that he names India book no.26, we get information on goods exported from India to Aden. Among such commodities we find a load of pepper of the gross worth of 402 Maliki <u>dinars</u>, from which 87 <u>dinars</u> have been deducted as customs.[1] In Chau Ju-Kua there is a detailed description of pepper. In the Hou Han Shu (118, 126) pepper is depicted as a product of Tien-Chu (India), and afterwards in Wei-Shu (102, 12a) and the Sui-Shu (83, 16a), as a product that Po-Si (Persian merchants) brought from India to China. In these sources long pepper has also been mentioned in Sanskrit is called pippali.[2]

Passing by the coastal regions of India in 1292 A.D. Morco Polo noticed much pepper, ginger, indigo and cotton growing in Gujarat.[3] That Calicut abounded in pepper, ginger, larger kind of cinnamon, myrobolans and zedoary is noted by Nicola Conti.[4] Abdu-ur Razzaq mentions that ships continuously sailed from Calicut to Mecca ladden with pepper.[5]

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1. Goitein, p. 342.
2. Cf. Chau Ju-Kua, p.223. It is noteworthy that Chau Ju-Kua is the first Chinese author to have mentioned pepper as a product of Indonesia; the Arab traders of the ninth and tenth centuries speak only of the pepper of India. Ibn Khurdadhbeh knew that pepper was produced in Ceylon, but his information went no further; the other source of supply, for him, was Malabar.
3. <u>The travels of Morco Polo</u>, tr. Manuel Kamroff, New York,1930, p. [illegible]
4. Cf. Travels of Nicolo de Conti, India in the 15th century, tr. R.H. Major, Delhi, 1974,p.50.
5. Travels of Abd Razzak, Ibid., p.19.

The position of Calicut in the 14th and 15th century was that of an emporium where every thing could be obtained.[1] Pepper grew all along the coasts of Malabar. Zakariya Qazvini a geographer of the 13th century in his description of Malabar says, "pepper goes from extreme East to the extreme West". The people of Europe he says are most fond of pepper which they carry to the extreme of Europe.[2] In a letter by Rashiduddin which contains a list of order for Indian commodities, we find a demand for 300 _mans_ of pepper.[3]

Cloves :

Cloves, which were not grown in any part of India, yet formed an article of re-export from Indian ports. The Genoese traders who carried on trade in India since 1224 A.D. also traded in cloves.[4] In his description of India, Al-Umari enumerates a number of things grown in India and cloves are one of them.[5] It is interesting to note that Chau Ju-Kua has located the areas where clove was grown. Beside Eastern Java where clove and sandal wood was grown, he also refers to the trade in cloves in Ceylon and Malabar from where the foreign traders used to

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1. _India in the 15th Century_, Introduction.
2. _Isl. Cul._, April, 1933, p. 306.
3. _Maktibat-i Rashidi_, p. 278.
4. _JASB_, Bombay, 1968-69, 43-44, p.179.
5. _Masalik al-Absar_ (tr.), pp. 7,10. Cf. _Subh-ul Asha_ (tr.), p.16.

to export them.[1] Marco Polo adds that clove grew in Nicobar Islands.[2] In his order for edible goods from India, Rashiduddin mentions five jars (martabans) of cloves and then thirty bottles of liquid clove extracts.[3] The presents which Sultan Alauddin sent to Rashiduddin Fazlullah included 300 *mans* of cloves.[4]

Ginger :

Some early references to ginger occur in three charters ranging from the 6th century A.D. to the early 8th century A.D. granted by the rulers of the coastal areas of western India to guilds of merchants carrying oversea trade in various commodities.[5] Nicolo Conti and Santo de Stefano inform us that ginger was widely cultivated in the coastal regions of Malabar and Calicut.[6] Masulipatam is known to have exported ginger. The earliest records of Genoese merchants trading in that area are found as early as 1224. Ginger was one of the commodities that they used to carry out of India.[7] Marco Polo observed that the Gujarat coast abounded in ginger.[8]

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1. Chau Ju-Kua, p.209. Cf. Nicola Conti, *India in the 15th Century*, p. 36.
2. Marco Polo cited in Chau Ju-Kua, pp. 209-10 *n*.
3. *Makatibat-i Rashidi*, pp. 284, 289.
4. *Ibid.*, pp. 278-9.
5. R.S. Sharma, p.69.
6. *India in the 15th Century*, pp. 5,21,36 *et passim*. Ginger according to John Huighen Van Linschoten(1583) grew at many places in India but the best variety that found market abroad grew on the coast of Malabar. *Purchas*,10,p.312.
7. *JASB*, Bombay, 1968-69, 43-44, p.
8. Marco Polo cited in Chau Ju-Kua,p.92 *n*; also Col.J.W.Watson, *History of Gujarat*, Bombay,1886, Introduction.

Camphor :

Camphor, camphor water and camphor oil are the products of the same substance. The Arabic al-kafur is a corruption of kapura which is a Sanskrit word; kafur occurs in Quranic verses. Quoting Ibn Abd Rabbih in Masalik-ul Absar, Al-Umari tells of a king of India who sent a letter to Umar bin Abdul Aziz in which he spoke of his land as one where grew the coconut tree, aloe-wood and camphor.[1] According to Alberuni the presents made by the king of India to the Sassanian ruler Anusherwan included ten mans[2] of camphor which in its shape was like qustaq or a little bigger. Ibn Jubyr writing at the close of the 12th century, mentions camphor among the Indian drugs brought from India to Mecca for sale during the pilgrimage period.[3] The author of Arais-ul Jamahir, has mentioned camphor and camphor water. At more than one places he says camphor is of many kinds and is available in the vicinity of India. Camphor of the variaties fansuri and kaji he says cost three hundred dinar a man and the common one five dinar a man.[4] At another place he says that camphor is brought to Iran from Siraf and Fars.[5] The presents sent by Sultan Alauddin to Fazlullah, also included two thousand mithqal of camphor.[6] In his

1. Masalik-ul Absar (tr.),p.28.
2. Kitab-ul Jawahir, p.71
3. Travels of Ibn Jubyr, p.116.
4. Arais-ul Jamahir, p.262.
5. Ibid., p. 322.
6. Makatibat-i Rashidi, p. 284.

list of order for various Indian herbs and drugs, Rashiduddin includes camphor.[1] Al-Umari does not locate any particular region for the growth of camphor but merely describes Indian mountains and rivers as its habitat.[2] Camphor was one of the Indian items of export to Iran.[3] In Jalua, according to Idrisi fine camphor was grown.[4] Camphor from Borneo (grown in Borneo ?) was brought from Malacca to India by the Bengali merchants according to Tom Pires who visited Malacca in 1512-15.[5]

Hashish and Opium :

That the opimm or afyun was used in preparation of drugs is evident from Alberuni's description.[6] Ibn Battuta in his account (1332 A.D.) of district Alaya in Egypt records that the people of the district were staunch orthodox sunnis who were addicted to taking hashish or Indian hemp.[7] Discussing the volume of trade and the commodities passing from the east through the Red Sea to the Mediterranean world, Braudel mentions opium as one of the commodities for medicinal purposes that reached Europe through the Mediterranean.[8]

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1. Makatibat-i Rashidi, p.197.
2. Masalik-ul Absar, pp. 28,44
3. Tarikh-i Wassaf, p. 184.
4. India and the Neighbouring Territories, p.7.
5. The Suma Oriental of Tom Pires (An account of the East, from the Red Sea to Japan, written in Malacca and India in 1512-1515) tr. Armando Cortesao, London, 1944 (Hakluyt Society), 1, p.93.
6. Kitab-us Sadna, p. 74
7. Ibn Battuta, pp. 123-4.
8. F.Braudel, Mediterranean and the Mediterranean World in the Age of Philip II, London, 1972, 1,p.339. Opium as a merchandise of Cambay, see Suma Oriental,1, p.43.

Baqqam :

Buqqam is the Persian and Arabic name for brazil wood and span wood from the bark of which a sort of dye is prepared.[1] Idrisi says that in Jarapatan there was a mountain called Amri and this mountain produced baqqam. It was exported from there to the entire world.[2] About the utility of baqqam for medicinal purposes, Idrisi further says that its roots were used as antidote against the poisoning caused by snakes.[3]

Tabashir :

Like baqqam, tabashir is also used in preparation of medicine. References to this substance, extracted from the joint of bamboos,[4] occur from time to time in the medical literature. On the authority of Idrisi, Otto Spies locates Thana as one of its main sources since its hills and fields produced 'qana or bamboo sugar which was exported from there to other countries. Another sustance from the bark-milk of bamboo was found in Thana from where it was exported to other countries.[5]

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1. Chau Ju-Kua, p. 332.
2. Nuzhat al-Mushtaq, extract translated in Hindustan Arabon Ki Nazar men, op.cit., p.231.
3. India and the Neighbouring Territories, pp.31,33.
4. Hobson-Jobson, s.v. pp.862,886; Purchas, 10, p.305.
5. India and the Neighbouréng Territories,p. 63. A late 16th century account (1583) records Coromandel coast abounding in tabashir, indigenously known as "sacar mambu". It was very much sought after by the Arabs and the Persians. Purchas, 10, p.305.

Myrobalan :

According to Steingass myrobalans are classified into three species namely yellow, black and chebulic myrobalan. Myrobalan was taken from India to the Islamic world, as appears from Alberuni's account.[1] According to him the original home of chebuli myrobalan was Jalandhar but since on its way to Islamic countries it passed through Kabul, it obtained the name Chebuli, or Kabuli myrobalan.[2] Chau Ju-Kua had seen myrobalan growing in Gujarat and according to him myrobalan was transported to Ta'shi countries, that is as far as the Mediterranean regions.[3] The use of myrobalan for medicinal purposes seems to be quite common. Sultan Alauddin's presents to Rashiduddin Fazlullah also included myrobalan.[4] Nicolo Conti in the early part of the 15th century describes Calicut as a noble emporium abouding among other things in myrobalans.[5]

Almajor almic

Almaj or almic myrobalan :

This species of myrobalan was exported in both the crude as well as refined form. According to Alberuni, shir-i-amla was

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1. Kitab-ul-Jamahir, p.82.
2. Ibid., p.82. Alberuni says that albrank was found in Kashmir and around Qandhar. Ibid.
3. Chau Ju-Kua, p. 93.
4. Makatibat-i Rashidi, p.279.
5. Travels of Nicolo Conti, India in the 15th century, p.21.

from 'islands' which is yellowish. Abu Juryh and Rayili are of opinion that <u>shir-i-amla</u> is the myrobalan which if soaked in milk may overcome the intensity of constipation.[1] It is also called <u>taj-al Arab</u>. According to Alberuni (quoting someone else's opinion) <u>shir-i amla</u> (shir-amla in Arabic) is the best variety and for that reason it is called <u>Shah-amlaj</u> like <u>Shah-ballut etc</u>.[2] *Alberuni says he had seen <u>shir-i amla</u>* growing in Kashmir in abundant quantity.[3] He further adds that the herb found in Islamic countries was brought from India and the Hills of Kashmir abound in it.[4]

But Mansoor Ali Harvi who seems to have been a contemporary of Alberuni says that the <u>shir-i amlaj</u> which is described by various writers as amla and prepared in milk is a corruption of the word <u>sir-i amlaj</u> —— an amla which has no stone. He claims that this kind of amla is grown in India and he has personally seen the place where such amla grows.[5]

Abu Mansoor also mentions some of the herbs only found in India and exported to the countries in which the Unani systems of medicine was prevalent. He says that all the herbs and drugs available in all the six climes of the world were available in India. Only three drugs namely <u>qil-i makhtum</u>, <u>roghan-i balsan</u>

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1. <u>Kitab-us Sadna</u>, p.84
2. <u>Ibid</u>.
3. <u>Ibid</u>.
4. <u>Kitab-us Sadna</u>, (Eng. ed.) Karachi, 1973, p.43.
5. <u>Kitab-ul Abnia</u>,*pp.4-5. I should like to thank Prof. Nazir* Ahmad for guidance on these terms.

and *ud-us salib* were not available in India; but their substitute found there worked more effectively, these being *gil-i gangi*, *roghan-i kazi* and *sang-i Banarsi*. The three drugs in turn were not found in any other part of the world.[1]

Musk:

Ibn Battuta says the mountain ranges of Kamrup extends to China and also to Tibet on the other side where the musk deer are found.[2] Naming a number of Indian rarities for sale at Mecca during the pilgrim period, Ibn Jubyr noticed Indian musk being sold there.[3] Alberuni and Al-Qalqashandi also consider musk to be a product of the Indian mountain. Serinatha, a Telugu poet dedicated his work *Haravilasam* to a very wealthy merchant of Nellore, named Avachi Tippaya Setti, who used to import very valuable articles from distant countries by sea and land during the 11th century. The poet says that his patron imported musk from Goa.[4] It is likely, therefore, that this item would have been brought from Northern India for export

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1. *Kitab-ul Abnia*, p.4.
2. Ibn Battuta, p. 268.
3. *Travels of Ibn Jubyr*, p. 117
4. Krishna Swami Ayyangar, *Sources of Vijayanagar History*, Madras, 1919, p.57.

during the period.[1] Ibn Faqih who sailed as far as to China through Persia and India carried musk home on his return journey.[2] Musk was used in fragrant medicines. Fazlullah in his letter asked three thousand mithqal of musk to be brought from India to Tabriz.[3]

Indigo :

Trade in Indigo does not seem to have been as important in this as in the subsequent period when demand for it increased in West Asian countries as well as in Europe. Chau-Ju-Kua mentions indigo as one of the products of the east that found a market in the Tashi countries.[4] A Persian source tells us that

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1. The main source of supply for musk, however, was the kingdom of Bhutan and Gauhati in Assam as it is evident from the account of some European travellers of later period. Cf. Jean Baptiste Tavernier, Travels in India, tr. V.Ball, London, 1889, 2, pp. 143, 183; also John Marshal In India, Notes and observations in Bengal, 1668-72, London, 1927, p.162. A substantial quantity of musk was exported to Europe as well as Persia. Thevenot's description of musk found at Ajmer presupposes his ignorance of the place of procurement of musk as it was not the product of plains but of the Himalayan regions. Indian Travellers of Thevenot and Careri, ed. Surendranath Sen, New Delhi, 1949, xxxv; pp.25,72. Musk obtained in Gauhati, Alamgir Nama, op.cit. 2, p.725; also found in the kingdom of Raja Bikram, Francisco Pelsaert, Jahangir's India, tr. W.H. Moreland and P. Geyl, (IAD), 1972, p.45.

2. Ibn Al-Faqih cf. Isl.Cul., April, 1933, p.310.

3. Makatibatei Rashidi, letter no.34, pp.197; also ibid., p.166; for another piece of information, Yazdani, pp.433-36.

4. Chau Ju-kua, p. 93

A Persian source tells us that though Indigo began to be grown in Il-Khanid Iran, the best quality was the one which India exported.[1] Marco Polo and Chau Ju-Kua both agree that Indigo grew in abundant quantities in Gujarat. Marco further adds that indigo grown in Quilon was of a fine quality and that grown in Cambay was abundant. The best quality of Gujarat indigo was known as Sarkhej.[2] In 1548 Iltimad Khan ordered Khudawand Khan to send one thousand sacks of Sarkhej indigo to Mecca.[3] The Genoese merchants who traded through the Indian merchants also imported indigo.

Gold and Silver :

Though India's demand for gold and silver in exchange for exports has become somewhat proverbial, we have evidence, however, that India also exported some precious metals and jewels in coins, ornaments etc.

A golden mat, studded with gems, exported from South India and Ceylon, was used in royal matrimonial ceremony of Al-Mamun. The tables and trays of Al-Mutawakkil's household were studded with some gems exported from India.[4]

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1. Cambridge History of Iran,5,pp.501-2.
2. The Travels of Marco Polo, ed. Milton Rugoff, London,1961,p.259, 262, 264.
3. Abdullah Muhammad Al-Makki Al-Asafi Al-Ulughkhani Haji Ad-Dabir, Zafar Ul Walih Bi Muzaffar Wa Alihi, An Arabic History of Gujarat, tr. M.F. Lokhandwala, 1, Baroda, 1970,p.242.
4. Simkin, p.71.

Alberuni informs us that among the items of presents sent by the king of India to Ausherwan, joshans (armlet) was one of them which contained gold and silver.[1] In the late 12th century India used coins of gold and silver besides cowrie shells.[2] That the Indian precious textiles exported abroad contained gold and silver is evident from the Geniza records.[3] According to Wassaf the prices of horses brought from Iraq to Malabar, Coromandel and Gujarat were fixed in dinar.[4] The assumption is that the traders carried gold dinar from India, deducting the amount they spent on purchase of other Indian commodities for import to Iran and elsewhere. However, it is difficult to assess the amount of gold thus exported from India. The rulers of India also sent gold to celebrated saints abroad for distribution as gifts as Sultan Muhammad Tughlaq did.[5]

Idrisi names Al-Rami as the country where gold and pearls of excellent quality were produced.[6] Al-Umari mentions Qarajil Mountains (Himalayas) where gold could be obtained while Al-

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1. Kitab-ul Jamahir, p.71.
2. Chau Ju-Kua, p.113. Hou Han Shu(118b) and Huan-tsang both are agreed on this point. The ratio of gold and silver was 1:10. (ibid.,p.113).
3. Goitein, p. 340.
4. Tarikh-i Wassaf, pp. 185-6.
5. Masalik-ul Absar, p.49.
6. India and the Neighbouring Territories, p.32.

Qalqashandi mentions Qannauj (surely the Himalayas adjoining the Kanauj territory) which abounded in gold mines.[1]

Yet the export of gold and silver outweighed by imports were small. Al-Umari opines, "for certain that for three thousand years India has not exported and what gold has been brought there from abroad has not gone out."[2]

Iron and Steel :

The history of export of Steel products from India can be traced to the remote past. In the 5th century Ktesias received as present from the king of Persian two excellent swords of Indian made steel. In the Periplus mentions has been made of Indian iron and steel exported from India to Abyssinia. The "Wotz" known in Europe was meant for the Indian steel which was prepared in Southern India. Indians also were expert in tempering steel and it was from them that the "secret operation" was adopted by the Persians and through them by the Arabs.[3] According to Idrisi the Sindi, Sarandibi and Banimani iron vied with one another for supremacy.[4] 'No iron' he says, 'is comparable to the

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1. Subh-ul Asha (translation), p.40. According to Al-Umari there were seven gold mines in the vicinity of those hills. Masalik al-Absar, pp.8,27.
2. Masalik al-Absar, p.61.
3. P.Ray, History of Chemistry in Ancient and Medieval India, Calcutta, 1956, pp. 101, 216.
4. India and the Neighbouring Territories, p. 23.

Indian one in sharpness ---- and no one can deny its superiority".[1] In the 13th century Medical literature ahan-i Hindi has been mentioned from which power was grinded and medicine was prepared.[2] Corroborated with the author of Mirat-i Ahmadi, who informs that in a village of Nahrwara iron-ore was dredged and mandur (a kind of powder) was prepared, it stands to reason that this medicine was common in Gujarat since long. We are also informed that this medicine was taken by the people to near and far off countries.[3] In the letter to his son Ibrahim, Fazlullah also orders him to purchase three thousand qasb-i Hindi (weapons) made of iron.[4] According to the Geniza records during the 12th century, iron and steel found one of the chief East-West articles of trade. Of a single mineral there were six varieties.[5] In India book no.26 among the commodities sent to Aden there was also iron of worth 247 Maliki dinars from which 27 dinars were deducted as customs.[6]

Copper, Bronze and Brass :

Copper wares were brought to the Gulf ports of Barygaza and Ubullah as commodities for export.[7] Although copper mines

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1. India and the Neighbouring Territories, p.23.
2. Arais-ul Jawahir, p.195.
3. Cf. Mirza Mohammad Hasan Ali Mohammad Khan, Mirat-i Ahmadi, ed. Syed Nawab Ali, Calcutta, 1930, p.251.
4. Maktibat-i Rashidi, p. 327.
5. Goitein, p. 339.
6. Ibid., p. 342.
7. Sulaiman Nadvi, Isl. Cul., July, 1933, p. 284; Simkin, p. 28.

existed in South-Western India, copper was imported from outside. Broken and useless copper vessels from Aden were shipped to India for the manufacture of new utensils and other wares.[1] Copper utensils in India were so excellently prepared that the Aden merchants always preferred the Indian copper products to the Yemenite ones.[2] These India copper utensils were taken across the Mediterraneans through Aleppo and reached Europe.[3] The demand for copper in India is evident from the fact that Bengali merchants on their return journey from Malacca carried copper, tin, lead, etc.[4]

A Tunisian named Abraham ben Yiju resided in India between 1132 and 1149 A.D. and owned a brass factory.[5] Twelve items of brass and bronze are also included in the Geniza records in the provisional list of West-bound goods from India and Indian Ocean countries during the 12th century.[6] Among the commodities Vasco da Gama permitted to trade with India, were brass utensils.[7]

Textiles :

The history of Indian trade in textiles goes back to a

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1. Goitein, p. 340.
2. Ibid.
3. Whiteway, op.cit., pp.5-6.
4. The Suma Oriental, 1, p.93.
5. Goitein, pp. 336-7.
6. Ibid., p. 339.
7. C.R.Boxer, The Portuguese Seaborne Empire, London, 1969,p.34.

very remote period in ancient India.[1] But Gujarat rivalled Bengal in the exports of textiles.[2] Describing the prosperity of Gujarat, Duarte Barbosa is full of praise for the development of textile industry in that region.[3] The fame of Bengali cloth is evident from Ibn Battuta's account.[4] says that at least five or six varieties of cotton fabrics were manufactured in Bengal itself besides a number of other items like silken handkerchiefs, gold embroidered caps, wares, basins, cups, guns, knives and scissors.[5]

In the provisional list of 77 commodities bound for the Western countries, mentioned in the Geniza records during the 12th century Indian textiles and silk fabrics have been included.[6] Ibn Battuta came to Shaliyat, a place in Malabar where he observed

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1. Hourani, op.cit., p. 28.
2. Chau-ju-Kua, p.92. Cf. Marco Polo, Ibid.,pp.92-93 n.
3. The Book of Duarte Barbosa (An account of the countries bordering on the Indian Ocean and their inhabitants, written by Duarte Barbosa, who was in the service of the Portuguese in India from about 1500 till 1516 or 1517. The account was completed about the year 1518 A.D.), tr. Mansel Longworth Dames, London (Hakluyt Society),1, pp.127, 137,141 et passim. Cf. The Suma Oriental, 1,p.156; also The Voyage of Pedro Alvares Cabral to Brazil and India (From Contemporary Documents and Narratives), tr. William Brooks Greenlee, London(Haklut Society), p.69.
4. Ibn Battuta, p. 273.
5. India in the 15th Century, Introduction; for varieties of Bengali cloth, The Suma Oriental, 1,p.92.
6. Goitein, p. 339.

five kinds of fabrics being manufactured; and Gibb is of the opinion that Chale, a corruption of the name of the port produced fine *shali* used for a soft cotton fabric.[1] Marco Polo notices cargoes of Indian cloth of silver and gold that were exported to Bahrain.[2] All along the Coromandel coast Marco Polo noticed fine cotton being produced. Since the 16th century Gujarat exported a number of commodities which included silk, *zarbaft*, *makhmal*, *kamkhab* etc.[3] Calicoes which took their name from Calicut were a carried by the early Portuguese adventurers from Malabar in the early 16th century.[4]

To sum up Indian, cotton cloth and other textiles were specially important items of export, particularly to South Asia and East Africa, and some reached Europe. They were carried by the Arabs to the Red Sea and from there found their way to Damascus and Alexandria from where they were distributed to the Mediterranean countries and beyond.

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1. Ibn Battuta, p.364 *n*.
2. Marco Polo cited by Belgrave, p.5.
3. Abu Zafar, *Gujarat Ki Tamad-du-ni Tarikh* (Urdu), Azamgarh, 1962, pp. 114, 115.
4. S.S. Kulshreshtha, *The Development of Trade*, Allahabad, p.213; W.W. Hunter, *The Indian Empire*, London, 1828, p.443.

IV

WESTERN INDIAN OCEAN ON THE EVE OF THE OPENING OF THE CAPE ROUTE

1. ARABIAN SEA SHIPS AND NAVIGATION BEFORE VASCO DA GAMA

The supremacy achieved by European ships in the 16th century in the oceans of the world may well be regarded as the most crucial break-through in the history of world commerce. The comparative advantage in technology by which this was achieved is, however, obscure for the simple reason that we do not yet know enough about non-European shipping and shipbuilding technology. For Chinese shipping technology Needham has rendered yeoman service (with important insights for other areas); but there is no comparable work on medieval shipping on the Arabian Sea.

In the survey offered here the purpose is to establish what the various elements of construction, design and operation of Arabian Sea ships (both Indian and Arab) were at the time the Portuguese arrived on the scene. It is well known that Indian *timber* was used on ships voyaging on the Arabian Sea, and it is to be assumed that, unless specific descriptions suggest regional variations, the information for ships of one coastal zone would be a fair indication of the technology adopted over the whole of Arabian Sea. In the course of this survey, it will be seen that in some matters, such as the use of sails of ships, this assumption may be misleading.

In keeping with this objective, the various elements of ship-craft and design are here surveyed separately in a loose logical order. Such division does not make for a succinct picture of any one kind of ship, but is unavoidable at the moment.

'SEWN' SHIPS

The process of ship construction began, naturally with the laying of the keel.[1] The primitive keel was the longitudinal base structure that supported the hull to which the planks were attached.

The premost task in constructing the ships was the joining of wooden planks. One method of doing this was rabetting; this consisted of the employment of the tongue-and-groove principle, i.e. planks were made fast by boring with an anger near extremities in which pegs or tree nails were driven.[2] Construction of ships based on the above principle was practiced

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1. Keeled ships were constructed at Calicut, of great burden, The Book of Duarte Barbosa(Hakluyt Society), 2, pp.76,107. Tome Pires tells us that the Gujaratis had trade relations with Grisee (Agraci), between Sunda and Sumatra, before the advent of the Portuguese. After their abandonment of their trade at Grisee, parts of their ships such as keels, anchors and other components were preserved there and shown to the people as a mark of presence of those sea farers. The Suma Oriental, 1, p.46.

2. See A.J.Qaiser, 'Shipbuilding in Mughal Empire during the 17th century', IESHR, 1968,5,p.150. The tongue-and-groove principle was mainly a characteristic of Gujarati ships. Hornel, quoted by Needham in Science and Civilization in China, Cambridge, 1071, 4(3), Sc. 28-29,p.389.

on the Indian Ocean shores, the Eastern Mediterranean and the Nile since a very early period.[1]

The ships whose planks over lapped and were sewn one to the other were known as clinker-built ships.[2] Breadly speaking, the clinker-built ships were characteristic of Northern Europe. This method of construction was not in any case used for ships of really large size.[3]

The ships of other regions like the Mediterranean, the Persian Gulf, the Arabian Sea and Indian Ocean and China were carvel-built.[4] These ships were sewn ships in which nails or tree nails were driven. In Periplus's time stitched ships having carvel-built hulls of teak and coconut wood were exported from Oman to Arabian ports. These ships could easily wi~~th~~ withstand shocks of shoals and jerks against reefs but were too frail for monsoon voyages.[5] Early example of Indian sewn ships may be cited from Sanchi sculptures.[6]

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1. Encyclopaedia Biblica, London, 1899,5(s.v.ships), f.448. For the joining of planks in Ist-Century Arab Vessels, see E.H. Warmington, The Commerce between the Roman Empire and India, Cambridge,1928,pp.8-9. But ships so built were too frail for violent winds.(Ibid.,p.5). Moreland considers Arabian Sea ships between 1250-1350 to have been structurally weak. W.H.Moreland, 'The Ships of the Arabian Sea about AD 1500',Journal of the Royal Asiatic Society of Great Britain and Ireland(JRAS),April, 1939,(2)p.173.
2. JRAS, January,1939,(1),p.66.
3. Hornel cited by Needham, 4(3),Sc.28-29,p.3888 n.
4. But there seem to have been some exceptions in the case of certain boats on the Ganges(the patela,melni and ulakh)which are clinker-built. Cf.Needham,4(3),Sc.28-29,p.388 n.
5. Simkin, p.42.
6. RK Mookerji,op.cit., pp.21-23. See also Lallanji Gopal,'Art of Ship Building and Navigation in Ancient India',Journal of India History, 1962,40, 1-3(no.118-120), p.315.

A late 9th century (889 A.D.) account of Yaqubi records sewn ships built at Ubullah which sailed as far as China.[1] Equally important is the account of Masudi (947 A.D.) of a Syrian ship wrecked on the coast of Crete. The teak-wood planks of the ship had holes and were sewn together with coconut fibre.[2] It would seem from this reference to the ship as a curiosity that while iron nails were used for joining the planks of the boats of the Mediterranean Sea, but those of the Indian Ocean were sewn together with coir.[3] Coir ropes continued to be exported from the Maldive and Laccadive Islands to the Persian Gulf regions mainly for cordage and sewing ships, planks. The late 12th century ships built in the Red Sea area were nailed while *jilab* constructed at Aydhab[4] were not. The latter were structurally weak and sewn with cord made from coconut fibre (qinbar).[5] Chau Ju-Kua (early 13th century) observed that the Arab *sambuks* were made of boards lashed together with coir ropes.[6] In the famous illustration in a

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1. *Kitab al-Buldan* (Book of the countries), tr. Wiet, p.226 as cite by Needham, 4(3), Sc.28-29, p. 465.
2. Masudi, *Muruj al-Dhahb* cited by Needham, 4(3), Sc.28-29, p.466.
3. *India and the Neighbouring Territories*, p. 130.
4. Simkin, p.83; Chau Ju-Kua, p.24. There seems to be extensive growth of coconut trees between Cannanore and Vilinjam in the kingdom of Quilon. Besides Maldive Islans, the coir of Malabar, also was an important item of trade. Coir in Malabar itself was used for ship's rigging and cables. Cf. *The Suma Oriental*, 1, p.83 also the *Book of Duarte Barbosa* (Hakluyt Society), 1, pp.27 *n*, 197; *Ibid*., 2, pp.107-8.
5. The Travels of Ibn Jubayr, p.65.
6. Chau-Ju-Kua, pp.24, 114. Ibn Battuta, though not a very keen observer so far as the technical side of ship construction is concerned, mentions the sambuk but says nothing about its construction. Ibn Battuta, p.87. Qinbar (or qanbar) according to Ibn Battuta was used for sewing the planks of the ships. These cords were more efficient than hempen fibre. The Indian and Yemenite ships were sewn with such cords. Ibn Battuta, p.243.

Baghdad MS of 1232 in the Maqamat of Abu Muhammad al-Qasim al-Hariri (1054-1122 A.D.) a vessel on the Euphrates which is depicted is a sewn ship.[1] Marco Polo says of the ships of Hormuz that the planks were joined by perforating with auger near the extremities; then wooden pins or tree nails were driven in. The planks, however, were made fast by sewing with coconut rope.[2] Ibn Battuta says that owing to the presence of reefs and fear of wreckage upon striking them, the ships of the Indian Ocean were not nailed but sewn with cords, which made the hull resilient in case of jerks or shocks.[3] Jordanus's description of the Malabar ships also point to the fact that the ships were stitched.[4] Santo Stefano in the 15th century observed the ships of Aden fastened together with cords, and the sails were made of cotton.[5] He also says that the planks of the Red Sea ships

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1. Hourani, pl. 7.

2. The Travels of Marco Polo, ed. Manuel Komroff, _op.cit._, p.48. It was observed by Marco Polo that cordage of ships made from coconut fibre was durable and could withstand against saline water. Catamaran log rafts of Madras were having their plank strakes pegged on along each side. Needham, 4(3), Sc.28-29, pp.393-4 _n_. For another model of the pegged type of ship, see T.C. Lethbridge, 'Shipbuilding', _A history of Technology_, ed. Charles Singer and others, Oxford, 1956, 2,p. 567.

3. Ibn Battuta, p. 243.

4. (Hakluyt Society), 1,31,p. 53 cited in _JRAS_, January, 1939, (1), p. 68.

5. Account of the Journey of Hiro-Nimo Di Santo Stefano, _India in the fifteenth Century_, p.4.

were sewn together with cords and the sails were made of rush mats.[1] One of Vasco da Gama's compatriots informs us that the ship he observed in the port of Mozambique (undoubtedly the ship must have been Arabs') was 'large and decked', without nails, the planks being held together by cords and the sails made of palm-matting.[2]

Barbosa in the early 16th century noted that the ships of Calicut were constructed on the old pattern, that is, no nail was used on them and that they were keeled ships.[3] Friars speaking of coromandel ships describes them as 'mighty frail'. He mentions that these ships constructed at the coast were sewn like clothes with twine; on their breaking there was indeed a breach.[4]

USE OF NAILS

As against this considerable evidence of the use of sewn ships, there is much evidence too of the use of nails in Indian Ocean ships. The earliest record of the use of nails in these

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1. Ibid., p. 3.
2. R.Armstrong, A History of Seafaring, London, 1968,2,p.35.
3. The Book of Barbosa (Hakluyt Society), 2, pp.76,108. Cf. Account of the Journey of Hiro Nimo Di Santo Stefano, India in the Fifteenth Century, p.15; ships of coromandel built in the same fashion, Ibid.
   It is certainly interesting to note that Barbosa had practical experience of shipbuilding and his observations therefore, are of great value. The Book of Barbosa, 2, pp. 107 n, 108; also Ibid., 1, Introduction, xliv.
4. Missionary Friars, Cathay and the Way Tither (Hakluyt Society), 3, p.66.

vessels comes from the account of Ibn Rusta, Hajjaj bin Yusuf, the Omayyad governor of Iraq (early 8th century) is said to have been the first man to launch ships with timber planks pierced with inverted sharp-edged nails.[1] Ibn Rusta is supported by Uthman Amr Ibn Bahr (d. 255/869 A.D.) of Jahiz.[2] Ezion-geber and Tal al-Khulayfah in Iraq were the known centres of ship-building because the regions produced enough iron for making nails.[3] Ibn Jubayr in the late 12th century specifically says that ships that were built near the Red Sea were nailed together.[4] It is possible that part of the aversion to the use of iron nails was owing to the quality of timber used which splintered when nailed.[5] Absence of nails in the Arabian Sea ships in the opinion of Alberuni was also owing to the prevalent notion that nailing would attract the ship to magnetic rocks.[6]

If one translator of Marco Polo is to be relied upon the planks of the Indian ships were fastened with iron nails.[7] During

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1. Abu Ali Ahmad Bin Umar Bin Rusta, Kitab al-Alaq Un-Nafisa, Leiden, 1891, 7,p.195-6.
2. Kitab al-Haywan cited by A.M.Fahmy, Muslim Sea Power in the Eastern Mediterranean, Delhi, 1966, pp.2-3.
3. Hourani, (preface) vii.
4. The Travels of Ibn Jubayr, p. 52.
5. The Travels of Marco Polo, ed. Manuel Komroff, p.48.
6. E.S. Kennedy, A Commentry upon Beruni's Kitab al-Amakin(on 11th century treatise on mathematical geography), Beruit,1931,p.81. Cf. Masudi, Muruj,p.365 cited in India and the Neighbouring Territories, p.130. From the description of some European travellers it is quite evident that the notion of attraction of iron to magnetic rocks buried in the Ocean bed was also prevalent among the European Sea farers also Cf. The Pilgrimage of Arnold Von Hwvf (1496-1499),tr. M.Letts(Hakluyt Society),pp. 156, 161.
7. The Travels of Marco Polo, ed. Manuel Komroff,p.262. Marco Polo during his stay in China observed that the Chinese ships were nailed. Cf. Needham, 4(3), Sc. 28-29,p.267.

Ibn Majid's time there seems to have been ships in which nails were employed. The name for such ships was mismaryat.[1] The Indian ships with nails were destitute of keels and were flat-bottomed.[2] Varthema observed that the ships constructed at Calicut were pitched from outside and an 'immense quantity' of iron nails was employed.[3] As against Varthema's statement, Barbosa observed that the ships constructed at Calicut, though keeled, were devoid of nails.[4] E.J. Payne's statement that 'the hard' wood used in constructing ships forbade the use of nails does not carry much weight as it is evident from numerous accounts that the forests of Burma and India produced in teak the best wood to stand nailing.[5] Pearson is of the opinion that by 1500 Muslim ships were primarily held together by cords but 'nails and glue' were also sometimes used in their construction.[6] The details of matetials used on the ship constructed at Ravi in 1594 by Akbar's order, also mentioned 468 mans and two sers of iron consumed in its building.[7]

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1. G.R.Tibbets, pp. 47-8, 49.
2. Three Voyages of Vasco da Gama, tr. J.Stanley,(Hakluyt Society), pp.20,40-2.
3. The Travels of Luonico di Varthema(1510 A.D.), tr.J.Winter Jones (Hakluyt Society),pp.20,40-2.
4. The Book of Barbosa, 2, p.76.
5. An argument as cited by Moreland, JRAS, April,1939,(2),8 p.179. Varthema's description of Calicut ships is worth quoting on the quality of wood. He says, "They also possess as good timber as ourselves, and in greater quantity than with us".
6. M.N.Pearson, Merchants and Rulers in Gujarat,Delhi,1976,pp.7-8. By "Muslim ships" Pearson might have here in mind the Gujarat ships which were probably built like the Arab ships.Cf.JRAS, April, 1939,(2),p.176.
7. Akbar Nama, Newal Kishore, p. 444.

Our evidence thus tends to show that the absence of use of nails in ships of the Indian Ocean was not universal.[1] Probably flat-bottomed ships or junks of large tonnage and built of Indian teak had nailed planks, while boats of the 'dhow' type used pegs and fibre for fastening the planks.

CAULKAGE

When the wooden planks had been laid together the 'lines of junction', fissures or seams were filled by inserting oakum, loose fibre or hemp, or the like; then pitch,[2] a resinous substance or tar, boiled into a semi-liquid state, was poured in. When cold, it formed into a solid crystal, giving protection against moisture, leakage or damage to the timber from seaworms. This process has been termed caulking.[3]

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1. Cf. A.Lewis, 'Maritime Skill in the Indian Ocean', JESHO, April, 1973, 16(1),p.247.

2. The pitch used in ancient times, according to Forbes, could be crude oil, asphalt, rock asphalt, petroleum asphalt and wood pitch of which the last one was produced in sufficient quantity in the East. But it could never compete with bitumen. (R.J.Forbes, Studies in Ancient Technology, Leiden 1964,1, pp.7,52). Forbes is of the opinion that tar and pitch were used in caulking ships from the classical period onwards. (Ibid.,p.52). It is quite likely that small boats like gaffa and hisbiya could be caulked with bitumen. Cf. Needham,4(3), Sc.28-29,pp.384-5. For mines and composition of bitumen see Ibn al-Baitar(d.1248 A.D.) cited by J.R.Partington, Origin and Development of Applied Chemistry,London, 1935,pp.175-6. For asphalt and its mines in Iran, Hamd-Allab Mustawfi, Nuzhat al-qulub, tr. G Le Strange, London, 1919,p.198.

3. Oxford English Dictionary, s.v. Caulking. For various other aspects and benefits of caulking ships, see Maurice Griffiths, 'Shipbuilder' Man, London, 1973, pp. 12-13. IESHR, 1968,5, p. 150.

Caulking was certainly employed in ship-building in the Arabian Sea before the coming of the Portuguese. It was, however combined with rabetting. The remarks of the European observors, therefore, that Indian ship-building was based on 'rebetting' and European on 'caulking' does not mean that Indians were ignorant of this method. The 8th century account by Ibn Rusta tells us that Persian Gulf ships were caulked with coal tar (muqayyarah).[1] The ships constructed at Ezion-geber and Tal al-Khulayffah between the late 10th and the early 11th centuries were pitched and caulked with resinous substance.[2] During the 11th century the seams of the hull were blocked by a mixture of resin or pitch with whale oil.[3] The early 13th century boats of the Somali coast (Chungli) were caulked with a mixture of whale oil and lime.[4] The seams of Arab sambuks of early time were pitched.[5] The late 12th century traveller, Ibn Jubayr, observed that the jilaba constructed at Aydhab were caulked with the coconut husk and smeared with grease or castor oil, or the

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1. Ibn Rusta, 7, p.197. Qir in Arabic according to Le Strange means asphalt. Hamd-allah in the 13th century mentions Ayn al-Qayyarah, which were probably asphalt springs in the Mosul district. Rusta's muqayyarah may, therefore, mean coal tar. See Hamd-Allah Mustawfi, p. 198.
2. Hourani, p. 9.
3. Simkin, p. 83.
4. Chau Ju-Kua, p. 131.
5. Ibid., p. 24 n.

oil of *qirsh* (shark) to soften and supple it against the many reefs encountered by the ships in the sea.[1] Marco Polo observed that the ships of Hormuz were not pitched to safeguard their bottoms, instead fish oil was smeared and caulking done with oakum. Both the outside and inside structures of the Indian ships were caulked with oakum.[2] Quick lime pounded with hemp mixed with oil substituted here for pitch. It was made into a kind of unguent which retains its viscous properties more firmly than pitch. The ship was caulked in the same manner after it was sheathed.[3] Ibn Majid is not very helpful about the construction of ships except that he mentioned caulking.[4] Varthema noted caulking applied to ships on the Calicut coast. He praises the excellence of carpentry and the import of oakum in abundant quantity for the purpose.[5]

SHEATHING

Sheathing in the traditional ship construction was meant to protect the hull against damage caused by the seaworms.[6]

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1. The Travels of Ibn Jubyr, p.65. Idrisi in the 11th century spoke highly of the Chinese ships the seams of which were filled with palm fibres and caulked with a mixture of flour and whale oil. The people of both the Indian Ocean area and China used whale oil for caulking their ships. Chau Ju-Kua, p. 131 n.
2. The Travels of Marco Polo, ed. Manuel Komroff, p.291.
3. *Ibid*.
4. Tibbets, p. 49
5. The Travels of Varthema, p.152-3.
6. David Middleton in *Purchas His Pilgrimes*, 3, p.93.

The use of sheathing was nothing new to the shipbuilders of the late Middle Ages. It was practised long before the Christian era.[1]

Marco Polo speaking of Indian ships says that they were initially made of double course of planks and when a year passed the ships were sheathed. The sheathing was carried on to a maximum of three courses of boards.[2] A.J. Qaisar supposes the latter statement to be an exaggeration.[3] But the traveller's description of Chinese ships sheathed to a maximum of six courses of planks indicates that it was not unreasonable for Indian ships to have had three sheathings.[4] It remains however to establish how the sheathing was executed. Marco Polo tells us that in the Chinese way of sheathing the planks were nailed over the earlier planks without removing them.[5]

Nicola Conti observed that the Indian-built ships had three layers of planks at its bottom which could stand up against tempestuous waters and weather.[6] As to the sheathing of the Coromandel ships, Friar says that every year 'there is a mending of this, more or less, if they propose to go to sea.[7]

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1. A History of Technology, 2, p.301.
2. Purchas His Pilgrimes, 4, p.301.
3. IESHR, 1968, 5, p.150.
4. Cf. Needham, 4(3),Sc.28-29,p.268.
5. Marco Polo as quoted by Needham, 4(3),Sc.28-29,p.268.Sheathing to the extent of four layers of planks seems to be quite normal in ships of the Indian Ocean as is evident from Barbosa's observation that the Javanese junks were sheathed to the courses of three or four layers of planks one over the otherand "so they remained very strong".The Book of Barbosa,2,pp.173-4.
6. Nicola de Conti, India in the Fifteenth Century, p.
7. Cathay and the Way Thither, 3(Hakluyt Society), p.66.

SHIP DESIGN

It is difficult to know what exactly the design of the ships voyaging on the Arabian Sea was before the coming of the Portuguese. In 1612, however, large Indian junks seized by the English off Mokha in the Red Sea were measured by them; the measurements of two large "junks" Rahimi and Muhammadi of Surat were as follows :[1]

	Rahimi feet	Muhammadi feet
Length (stem to stern post)	153	136
Keel	119	96
Width (at top of the sides)	42	41
Depth (top of side to keel)	31	29½
Main mast (length)	-	108
Main yard	-	132

These measurements suggest that these junks were 'round' ships, i.e. they had a very high width ratio. The L:W in case of the <u>Rahimi</u> was 3.4: 1 and in that of Muhammadi, 3.3:1. These ratios be compared with the measurements of a Portuguese carrack seized by Clifford in 1592. Here the L: W ratio was 3.53:1[2] It thus gave a slightly longer length, but essentially the range was the same. The length: Keel ratio in the Indian ships was

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1. John Saris in <u>Purchas His Pilgrimes</u>, 3, p.396.
2. F.Braudel, <u>Mediterranean and the Mediterranean World in the Age of Philip</u> II, London, 1972-73,1, p.302.

1.28:1 and 1.41:1, whereas it was in the carrack. That is to say, the carrack allowed much longer rakes than in the junk. Her main mast was 120 ft. high, compared with 109 ft. in the Muhammadi. Subsequently, shorter keels were built, and the width reduced in European shipping. The length: depth ratio which was 5:1 and and 4.6:1 in the two junks showed that the length in relation to depth was smaller in Indian ships than was allowed in European ship-building of the 17th century.[1]

By being round and deep the junks provided a proportionately larger space for cargo and passengers; but this also meant that they would be slower since water resistance and their draught would both be greater. Clearly such ships were "monsoon ships", that is they ran voyages with the help of the strong monsoon winds. Their roundness caused comment among European navigators one of whom refers to the junks being able to move sideways like crabs.[2]

METHOD OF CONSTRUCTING DECKS

Referring to the sculptures of the temple of Jagannatha at Puri (c. 12th century A.D.), Mookerji points to a barge having cabin with a rocking-seat within.[3] During the 14th century the

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1. Griffiths, 'The Shipbuilder', Man, p. 68.
2. English Factories in India.
3. Mookerji, pp. 25-26.

Chinese junks had "water-tight wooden case which came up to the deck level, a large drop keel, or centre board". This technique seems to have reached Europe only in the middle of the eighteenth century.[1]

Buzurg bin Shahryar (10th century) mentions ships which could accommodate 400 passengers having cabins (balanj). Hourani says that, "ships which could hold 400 men such as he (Buzurg) mentions, were without decks over some part of their extent".[2] A cabin in which perhaps a party of merchants is sitting may be seen in Hariri's ship.[3] Marco Polo says of Hormuz ships that, "the vessel has no more than one mast, one helm, and one deck."[4]

It seems, however, that in the 15th century Arabian Sea ships often lacked decks and had broad flat bottoms. Jordanus (14th century) and Stefano tell us that there was no deck in the Indian vessels.[5] Moreland's opinion based on Portuguese evidence also is that generally "there were no decks (in Indian ships) in the fifteenth century."[6]

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1. Griffiths, Man, p. 42
2. Buzurg bin Shahryar, Ajaib al-Hind, pp. 34, 94, 141 (cabins); 165 (a ship with 400 men); also 53 (200 slaves); as cited by Hourani, p. 98.
3. Hourani, fig. 7.
4. Travels of Marco Polo, ed. Manuel Komroff, p.48.
5. JRAS, January, 1939(1); Journey of Hiero Nimo Di San to Stefano, India in the Fifteenth Century,p.8; ships constructed at the Calicut city having no decks, The Book of Duarte Barbosa, 2, p.76.
6. JRAS, January, 1939,(1), p.51.

It is difficult to say why decks should have disappeared from Arabian Sea ships between the 14th and 16th centuries. It was obviously an inconvenience in that it let in water directly into the hold in rough weather and wasted space that could have been utilised. One can only conjecture that vessels with flat bottoms could accommodate the heavy cargo that they carried in the bottom-hold without any need for decks above. But this is not a very satisfying explanation.

BAILING WATER AND WATER STORAGE

Jordanus tells us that the ships of the Indies were undecked and open. The sea water that collected at the bottom was bailed by men who always stood in a pool for rendering this service.[1] In Hariri's ship one can easily see two men of the crew standing at the bottom of the vessel, presumably assigned to bail water.[2] On his return journey to Cambay from Sumatra Stefano says that his ship had no deck and got filled with water; there being no means of bailing the water out, it sank.[3] Apparently no pumps of any kind (ball-and-chain of the Western kind or the Persian-wheel or the Chinese box-on-chain) were used in Arabian Sea vessels

1. He wrote his account of Indian Vessels from Malabar.
2. Hourani, fig. 7.
3. India in the Fifteenth Century, p.8.

Water storage posed a problem for all vessels that sailed across the seas and did not simply hug the coast-line as was presumably the case in the Indian Ocean before the "discovery" of the Monsoons.[1] Arab navigators of the early 16th century mentions the _fantash_ which was the vessel that contained drinking water.[2] The technique of Indian carpentry had advanced to the extent that water tanks made of planks were thought more convenient than European coppers' casks.[3] Provisions were also loaded on board ship according to the number of days a ship was to remain on voyage.[4]

SAILS

The sail is (or was before modern steam boats) essential for practically all vessels going out in the open sea, though the sails might also be employed on boats plying on large rivers as in ancient Egypt, Mesopotamia and Indus Valley.[5] Until almost the

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1. Indian in the _Fifteenth Century_, Introduction, VI.
2. Tibbets, p.56. Barbosa a certainly observed the ships of Moors at Maldive Islands storing water and provisions aboard their vessels but he does not mention as to how water was stored. _The Book of Duarte Barbosa_, 2, p.108. Similarly at Terve in the Kingdom of Hormuz, _Ibid_., 1,p.69.
3. Irfan Habib, 'Technology and Economy in Mughal India', _IESHR_, 1980, 17(1),p. 15 ; also A.J.Qaisar, _Ibid_., 1968,5, 150-54. A 17th century Chinese account mentions ships bound for foreign voyages carrying several piculs of water in bamboo barrels. Needham, 4(3), Sc.28-29,p.416.
4. Journey of Abder Razzak, _India in the Fifteenth Century_, p.45.
5. Needham, 4(3), Sc. 28-29, p. 609 _n_.

beginning of the Middle Ages the 'square sail' was the most common; but in the Byzantine Empire the lateen (whether triangular or 'quasi-) sail is depicted in the 9th century; and there is some evidence summarised by Needham that the Arabs were using sails of this kind at about that time or slightly later.

LATEEN SAIL

Though the lateen sail has been identified with the Mediterranean square sail, its characteristics differ in some respects from the latter. Naish describes the lateen sail as the fore-and-aft sail typical of the Mediterranean and the Red Sea.[1] The advantage of the lateen sail over the older square sail is thus summed up by Ashtor:

> "This triangular sail, the upper edge of which is held up by a long yard, called an antena, and rigged aslant towards the stern, is much easier to control from the deck than the ancient square sail, especially when the wind is not too strong."[2]

Crafts with lateen sail could sail close to the wind keeping a steadier course if the third mast was rigged with a lateen and not with a square sail.[3] The lateen sail also made voyages easier in tempestuous seas.[4]

1. A History of Technology, 2, p. 583.
2. Ashtor, op.cit., pp. 104-5. See also Frank C. Bowen, Ship For All, London, 1952, p.13.
3. Griffiths, Man, pp. 27-28.
4. Ibid., p. 30.

Thus the ships of Columbus in 1492, the famous carrack Santa Maria followed by two smaller vessels Nina and Pinta and the vessel of Vasco da Gama in 1498 were all rigged with lateen sails.[1] These sails had been borrowed by the Iberians directly from the Arabs.[2]

The Indian Ocean's adoptation of the early lateen was the bifid mast sprit sail or proto Ocean sprit sail.[3] It is believed to have been related to the Melanesian 'double-mast' sprit sail.[4] The Indian Ocean fore-and-aft, therefore, appears to be the third feem of its four evolutionary stages[5] in which the fore-portion of the sail was curtailed and the aft was elongated.[6] Its use was particularly prevalent in the Western half of the Indian Ocean.[7] The model of a lateen sail mounted on a 13th century boat on the river Euphrates may be seen from the Maqamat of Harizi.[8]

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1. It is interesting to note that the advantage of this kind of sails is that a carrack can enter even the shallow harbours of the coast. The fleet of Vasco da Gama consisted of four vessels, namely Sao Raphael and the Sao Garial, both 120 tons; the Berrio was of 50 tons and the store-ship of 200 tons. _The Voyage of Pedro Alvares Cabral to Brazil and India_, (Introduction) xv. Cf. Griffiths, _Man_, pp. 28, 30.
2. Needham, 4(3), Sc. 28-29, p.509.
3. _Ibid_., also Griffiths, _Man_, p.44.
4. Griffiths, _Man_, p.44, Needham, 4(3), Sc.28-29, p.590.
5. Hourani, p. 101.
6. _Ibid_., p. 102.
7. _Ibid_.
8. _Bib. Nat. Paris_, For reproduction see E.Blochet, _Musalman Painting_(xll-xviith Century), London, 1939, pl. 17.

SQUARE SAIL

If the square sail is efficiently tacked it could run before the wind.[1] But normally the tacking was not possible with the square sail.[2] The sail which attained so much of its universal character and was used widely by the Indian navigators during the later Middle Ages had its origin in ancient Egyptian boats.[3]

The text of Ibn Majid mentions qila which would mean sail, while in his verses shira is used to describe the sail. The sail of Ibn Majid's ships has been interpreted as that of the lateen pattern; but the calculations of sail-making, hisab tafsil al-qila points to nearly square sail.[4] Quoting Johnstone, Tibbets has made an attempt to reconstruct the sail of Ibn Majid. The form of the sail made the luff and the leech parallel as the sail is made of shaiq or strips of material of standard width. The ratio between the luff and the leech is roughly 1:6 in the main sail and 1:4.5 in the mizzen.[5]

From Ibn Majid we learn of a type of sail which was originally Indian. It was known as al-qulu al-Hindiya.[6] It is likely

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1. A History of Technology, 3, p.472.
2. Needham, 4(3), Sc. 28-29,p. 513.
3. Ibid. The square sail was used in the early Indian vessel (Hadi Hasan, p.89).
4. Tibbets, p. 52.
5. Ibid.
6. Ibn Majid, The Third Fa'ida, Tibbets, p.116; also Ibid.,p.53.

that the term refers to the "make-shift" top sale which is often used in present-day _dhows_. The jib seems to have been missing from the Arabian Sea ships until the advent of the Portuguese.[1] The term for rigging was _hibal_.

Besides texts of Arab navigators and travellers we have some pictorial evidence on the square sail. A 13th century ship from a manuscript of Hariri's Maqamat shows square sail fastened near the stern of the ship. The sail is tacked in such a manner as to take full advantage of wind.[2] Another depiction of a boat is that by Nishapuri of about 1500. The boat carries a square sail while it also has an oar and a sowing men. The sail is definitely tacked with iron rings on all its four corners. The sail appears to have been made of cotton cloth.[3]

Marco Polo tells us that the Hormuz ships had "no more than one mast, one helm, and one deck."[4] It is evident from the description that the ships were fitted with one mast each and, we can safely assume that there must have been single-sail ships. But as to the shape of the sail precise evidence is lacking.[5]

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1. Tibbets, p. 53.
2. Hariri's _Maqamat, Bib. Nat_. For reproduction see G.F. Hourani, pl.7.
3. Nishapuri, Tabriz or Kazwin, _History of the Prophets_(about 1500 A.D.), _Bib.Nat.Paris_. For reproduction see E.Blochet,pl.cxxxii.
4. _The Travels of Marco Polo_, p.48.
5. It has been suggested by Hourani that since 'square rig' has the 'advantage of stability' on larger vessels, it may be assumed that the Indian-built large ships carried square sail Hourani, p. 101.

Marco Polo informs us that some of the Indian ships were rigged with four sails and some with two masts which would mean that some were rigged with two sails.[1] A miniature from the Hamza Nama (Akbar's court, 16th century) shows a seagoing ship with sail affixed with two rods, one at the bottom and the other at the top. The ropes joining the mast and the sail are tacked with iron-rings.[2]

The probability is that the Indian Ocean ships by 1500 still carried square sails.[3] It is also probable as A. Lewis has asserted,[4] that Indian ships were already being built with several masts to carry multiple sails.

MASTS

The term 'diql' or 'daqal' in Arabic literally implies for a "palm trunk".[5] The masts of the Arab ships were proportionately loftier than the hull. The measurements of Buzurg bin Shahriyar give fifty dhira i.e. seventy-six feet.[6] Though travellers like

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1. Travels of Marco Polo, p. 261.
2. W.G. Archer, Indian Miniatures, Greenwich, Conecticut, 1960, pl.18.
3. Paintings of Jahangir's Time (c.1650) from Collection of late Sir Cowasji Jahangir, Bombay.
4. JESHO, April, 1973, 16(1), p.247.
5. Hourani, p.100. Cf. Tibbets, p.52.
6. Aja'ib al-Hind, p.87; Abu Zaid Sirafi,pp.130-1; Mas'udi, Muruj, 1, p.344 as cited by Hourani, p.100.

Marco Polo and Montecorvino mention a single mast in the Arab ships and the Arab authors have mentioned the mast in singular form, the phrase like <u>daqal al-akbar</u> would suggest more than one mast.[1] The use of two-masted ships is mentioned in Ajaib-al-Hind.[2]

On the Indian side too, the sea going vessel in the 7th century Ajanta paintings depicts three oblong sails attached to wastes.[3] Marco Polo in the late 13th century noticed Indian ships having four masts and some with two masts.[4] But about the ships of Hormuz he says, 'the vessel has no more than one mast, one helm and one deck".[5]

Varthema observed two masts on Calicut ships.[6] A miniature of Jahangir's time shows a double-masted round ship.[7] A 1550

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1. Hourani, p.100
2. <u>Ajaib al-Hind</u>, p.81, cited by Tibbets, p.52. The ships of Ibn Majid and that of Sulaiman al-Mahri both carried two masts.
3. Mookerji, p. 29.
4. Marco Polo in <u>Purchas</u>, 4,p.291. Cf. The Travelàsof Marco Polo. ed. Manuel Komroff, p.261.
5. The Travels of Marco Polo, ed. Manuel Komroff, p.48; Cf. <u>Purchas</u> 11, p. 205.
6. <u>Travels of Varthema</u>, pp. 152-3. From Barbosa's account of four-masted ship in the South-East Asian Waters, one is guided by the suggestion that the practice was not so unusual. He observed Chinese and Javanese ships at Malacca fitted with four masts. <u>The Book of Duarte Barbosa</u>, 2, pp.172, 173. But quoting Ramusio and the Spanish version the editor of the text,modifies it to 'two-masted". <u>Ibid</u>.,<u>n</u>.
7. <u>Paintings of Jahangir's Time</u> (c.1650) from collection of the late Sir Cowasji Jahangir, Bombay.

representation from the history of the prophets by Nishapuri depicts a single-masted boat.[1] But the Hariri ship has two masts[2] one in the middle for the helmsman, and the other near and facing the stern-post. It carried a square sail. The ships belongs to the 14th century but resembles slightly the 14th-century round ship of the Mediterranean.[3]

Ibn Majid tells us that strong wind lapping on the wrong side of the sail was a danger to ships, particularly with loose rigging and the large sail at its maximum height.[4]

Thus M.N. Pearson's view that by 1500 Muslim ships designed on the Arab model were single-masted[5] needs re-examination. Since the 10th century onward the sources available tend to suggest that the ships of the Indian Ocean were two-masted with the exception of the vessels of the Chinese-South east Asian Style, which had probably a single mast. A Lewise however says, "Indian-type ships were often large, upto 350 to 400 tons, carrying several masts and were generally built of teak logs sewn or stitched

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1. For representation see Blochet, pl.xxxii.
2. Another two masted boat on a river from a manuscript of Dioscrides dated A.H.619(1212 A.D.).(Reproduction in F.R.Martin, <u>The Miniature Painting and Painters of Persia, India and Turkey</u>, London, 1912, 2, pl.5.
3. The Hariri's ship reproduced by Hourani,pl.7.
4. Tibbets, p. 57.
5. Pearson, p.7.

together."[1] It would rather seem from our evidence that in the 15th and 16th centuries the bigger vessels were double-masted while the smaller might have had single masts.

NAVIGATIONAL INSTRUMENTS

In the early navigation, astrolabe was used to find the altitude of a particular star.[2] Its use was to measure and calculate the latitude and time at night. The earliest reference to astro-lable in Islamic texts is in al-Fihrist where one constructed by Abu Ishaq Ibrahim bin Al-Fazari is mentioned (c. 777 A.D.). The instrument was based on a Greek model as the Arabic name <u>astrolab</u> indicates. The earliest Arabic treaties on astrolabe come from Ali Ibn Isa Al-Astrolabi (maker of astrolables), who flourished in Baghdad and Damascus before 830 A.D.[3] But the earliest surviving instrument seems to have been made in the 10th century.[4]

On land the main use of the astrolabe was for astrological calculations as well as time-keeping. But it became a very important aid to navigation. The European navigators were using astrolable even before 1200 A.D.[5] But this was a borrowing from

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1. <u>JESHO</u>, April, 1973, 16(1), p.247.
2. Wynter and Turner, <u>Scientific Instrument</u>, London, 1975, p.54.
3. Ibn Al-Nadim, <u>Al-Fihrist</u>, Al-Maktbat-ut Rahmania, Cairo, p.381. Cf. P.K.Hitti, <u>History of the Arabs</u>, London, 1961, p.385.
4. Wynter and Turner, p. 15.
5. Wynter and Turner, p.15.

the Arabs. By the 11th century the Arabs were already using the astrolabe in the Mediterranean Sea and the Indian Ocean.[1]

The use of astrolabe is depicted in 16th century Mughal miniatures showing sea-going vessels. The astrolabe is here employed to determine the Latitude and time apparently with the simultaneous use separately of the shadow-clock.[2]

The full use of the monsoon was only a partial remedy to the dangers of navigation on the high seas. The astrolabe could help define the ship's position, but only when the sky was clear. The difficulty was overcome only with the coming of the magnetic compass.[3]

The first use of the compass that revolutionised seafaring activity in the Mediterranean can be traced to about 1185 A.D.[4] It was virtually an import from China.[5]

In the 13th century the 'fish magnet' or the magnetic needle floating in water was in use in the Arabian Sea, as affirmed in contemporary descriptions of Awfi (1232 A.D.) and Wibajeqi (1282 A.D.).[6] By the time of the intrusion of the

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1. S.M.Ziauddin Alvi, <u>Isl. Cul</u>. July, 1948, 22(3),p.266. In this connection the author quotes Trait See also F.Hirth and Rockhill (eds.), <u>Chau Ju-Kua</u>, p.29.
2. <u>Hamza Nama of Akbar's Court</u> (1567-82 A.D.), now at Vienna.
3. Warmington, p. 51.
4. Needham, 4(3), Sc. 28-29,p.379.
5. Griffiths, <u>Man</u>, p.24.
6. Muhammad Awfi,<u>Jami'ul Hikayat</u> as cited by Irfan Habib,'Technological Changes and Society(13th and 14th centuries)',xxxx Presidential Address, Medieval Indian Session, 31st Session of the Indian History Congress, Varanasi, December, 1969,p.21.

Portuguese into the Indian waters, Muslim navigators were using the compass as well as sea cards.[1] Roteiro in the company of Vasco da Gama in March, 1498 on the Mozambique coast examined Arabian ships equipped with mariner's compass, quadrant and charts.[2] It was nothing surprising to Ibn Majid when astrololabes and quadrants were shown to him by the Portuguese in 1498. Ibn Majid replied that the Arabs had similar instruments.[3]

ANCHORS

Anchors in the Arabian Sea and Indian Ocean ships were constructed of wood and stone (especially marble).[4] The major question is whether iron anchors had come into use. In Hariri's ship the anchor is shown hinged with an iron-chain wound around a wooden post. The anchor which has four sides is supported by a vertical rod in the centre. The sides shown in the figure are

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1. Purchas, 2, p.68.
2. Armstrong, A History of Sea faring, 2, p.35.
3. Needham, 4(3),Sc.28-29,p.567. For instance the existence of "Kamal" or India tastes or "tablas de la India" or 'tabuas' of India was equally efficient for the measurement of stars or the Sun's declination as the astrolab used by the Portuguese Captains and seafares. Master John,in the company of Cabral's fleet, in his letter to the King dated 1st May,1500, elaborately describes his first sight of this mechanical device which gave proportionate difference of degrees in star's position and the declamation of the Sun as the astrolab used by the fleet. See The Voyage of Pedro Alvares Cabral,p.39 n; for mechanisim and operation of 'Kamal' and for isba and ruban, ibid.; for further information, Tibbets, op.cit.
4. Marble stone (calcium bicorbonate) was indeed lighter than stone (carbonate). For anchors made of marble see Travels of Varthema, p.152.

crescent in shape. Such a shape could only belong to an iron anchor.[1]

Anjar or langar is the Persian term for anchor. Graphel anchor was generally used in the Indian Ocean before the coming of the Portuguese who introduced another type known as <u>bawara</u> by the Arabs.[2] The graphel as against the stone killick was known as <u>hadid</u> (iron) because the anchor was wholly composed of iron. The anchor was attached to a line called <u>kharab</u>.[3] Tibbets referring to Hariri's ship remarks that it "shows a graphel hanging prepared from the bows".[4]

BOATS ON SHIPS

Our evidence, scanty though it is, does suggest the awareness of shipwrights to measures of safety during times of peril or wreck. The vessels too carried small boats.[5]

References to such boats come from early Islamic literature.[6] Qarib and dunij are said to be the safety boats

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1. Hourani, fig. 7. See also Richard Burn in <u>JRAS</u>,
2. Tibbets, p.55. Besides the graphel the Arabs also used the stone killick which was held together by driving iron spikes. It was called sinn(tooth)which Ibn Majid calls <u>al-anjar al-siniyu</u>(the Chinese anchor).
3. The <u>kharab</u> held both the anchor and the sinn and it might have been some sort of chain. <u>Ibid</u>.,p.55.
4. Tibbets, p.56. Hourani is almost convinced that the Hariri's ship used metal anchor of graphel shape. Cf. Hourani,p.99
5. Tibbets, p.56. Marco Polo describes Chinese ships being towed by smaller boats tied with ropes.(Needham, 4(3),Sc.28-29,p.467
6. Cf. S.Sulaiman Nadvi, <u>Arab-on Ki Jahazrani</u> (Urdu), Azamgarh, 1935, p.5.

attached aboard the ships. Buzurg Bin Shahryar in his Ajaib al-Hind tells us that a qarib could accommodate fifteen men as against dunij which accommodated only four. Even a qarib could take to the maximum of thirty-three men. "It was used as a lifeboat", and at one time it is said to have towed a ship. The dunij could be used both as a shoreboat or life boat and if need be it could also be fitted out with mast or sail.[1] In the 11th-13th centuries a ship sailing on the Indian Ocean normally carried another smaller boat belonging to the same proprietor or to his partner.[2] In the 15th century Ibn Majid treats the ship's boat as piece of equipment normally carried by the main vessel. It is termed as sambuj or sanbuk.[3] These smaller boats not only served as lifeboats but were also employed for carrying goods between the shores and the ship's anchorage.[4] Santo de Stefano, a 15th century traveller, says that during his return voyage from Sumatra ato Cambay, the victims of wreckage were saved by boats carried by other vessels, five miles ahead of the wrecked ship.[5]

The survey attempted thus shows that there is no reason to believe that about 1500 ship-building and navigational craft

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1. Buzurg Bin Shahryar as cited by Hourani, p.99. Cf. Tibbets, p.56.
2. Goitein, p.348. It is noteworthy that such a practice was quite common on the Mediterranean as well. Ibid., p.50.
3. Tibbets, p.56.
4. Such smaller boats used for transhipment at Jidda were known as Kulzum. Ency. of Islam (new ed.),p.932.
5. Journey of Hieronimo di Santo Stefano, India in the Fifteenth Century, p.8.

in the Arabian Sea was very backward compared to the Atlantic or Mediterranean. It may be said only perhaps that the earlier survivals were more numerous. Moreover what was lacking now was not technique, but the spirit of innovation that was to transform European navigation in the following hundred years.

2. CARRIERS OF ARABIAN SEA TRADE

As is well known it was the Arabs, Gujaratis and Malabaris who were the principal seafarers in the Arabian Sea on the eve of the advent of the Portuguese.

The routes on which Arab-owned ships plied were mainly those from Malabar to the Red Sea;[1] from Malabar and Konkan to Hormuz;[2] from the Gujarat ports to the Red Sea and the Persian Gulf[3] and from the coast of East Africa to the Red Sea ports.[4]

The routes on which Indian-owned ships sailed were: From Gujarat and Malabar to Malacca; from Gujarat (rarely Malabar) to

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1. This route was almost in monopoly of the Arabs. JRAS, April, 1939,(2),p.175.
2. This route, though in monopoly of the Arabs, was also used by Indian shippers. Ibid.
3. Though marked as the Arab line, Indian did have a share. Ibid.
4. Mainly meant for carrying Sofala gold to the Red Sea ports, was also in monopoly of the Arabs. JRAS, April, 1939,(2),p.175.

the East African ports;[1] from Gujarat to Hormuz;[2] from Gujarat and the Konkan to the Red Sea;[3] and, lastly, coastal routes on which smaller ships were employed.

ITALIANS IN THE LEVANT

Before the discovery of a passage round the Cape of Good Hope the main outlets of Eastern commodities to Europe were Alexandria and Aleppo. The Mamluk Kingdom of Egypt thus stood astride the main channels through which traffic went from the Indian Ocean to Mediterranean Europe.[4] It was one of the sources of economic prosperity for the Sultans of Egypt. The uniform duty in their own ports on goods of all description was 5% but the Genoese and Catalans were subjected to 10% duty.[5] Revenue accruing from the trade was so high that in 1300 an order was made by the Mamluk Sultan of Egypt that spices and drugs could only pass through the Red Sea.[6] Hakim Ba-Amrallah exempted the sailors of the Red Sea from taxes on ships and boats and Sultan Qalawin made every effort to keep the Red Sea merchants secure.[7]

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1. Moreland treats this route as a minor one.
2. Moreland's finding suggests Indian share in this trade was less than of the Arabs. JRAS, April, 1939(2),p.177.
3. The pilgrim ships employed on this route were owned by Muslim kings and princes.
4. India in the Fifteenth Century, Introduction XVII
5. The Gazetteer of Bombay City and Island, Bombay,1902,1,p.404. Egypt's position in the Eastern trade with the West was that of intermediary.
6. Antonio Galvano,'Discoveries of the World', Purchas, 10,p.2.
7. Maqrizi, al-Khitat, 2, p.35; ibid., Kitab al-Suluk,1,p.705.

The Venetian and the Genoese merchants were close competitors in the commerce for Eastern goods; and the Genoese even ventured to trade with Calicut by the way of Cairo. Subsequently Florence entered the commerce too and strengthened her commercial ties with Alexandria. Genoese position in the Eastern Mediterranean received a setback when the Ottomans conquerred constantinople in 1453 and expelled them from that city.[1] For the moment this further enhanced the commercial importance of Mamluk Sultanate (then embracing both Egypt and Syria), where the merchants of the West were still welcome.[2] Therefore to quote K.M. Panikar, "The real importance of the new 'discovery' (of the Cape route by the Portuguese) lay in the fact that it broke the monopoly which the Venetians and the Egyptians had so long enjoyed in the trade with India."

THE MOORS

At the very outset the term 'Moors' calls for an explanatio[n] The Muslims that the Portuguese in their own homeland encountered were the 'Moors', or the peoples of North-Western Africa. They, therefore, began to call all Muslims whatever region they might belong to, as 'Moors'. Vasco da Gama on the Southern coast of

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1. India in the Fifteenth Century, Introduction XVII. It was only after 1453 that the attention of the Turks was drawn towards the East. V.Minorsky, 'Persia in A.D. 1478-90'.

2. A history of Kerala, pp. 33, 34.

Africa met many 'Moors', and he was also guided to Calicut by a 'Moorish' pilot. Given such a broad scope of the term 'Moor', embracing the Arabs as well as the Gujarati and Malabari Muslims, it is not surprising that the Portuguese on their arrival should have found the "Moors" dominating the Indian Ocean from Madagascar to the Straits of Malacca."[1]

THE ARABS

Moreland treats all those carriers as Arabs who belonged to the Arabian seaports including the Egyptian merchants. But Arab merchants are also found in various other ports of the Indian Ocean shores, for instance in Malacca, Java, on some of the Indian ports and in Hormuz as well. These merchants had agents in East Africa, Mozambique and India. By 1500 they exercised control over the most lucrative trade of the Mediterranean.[2]

Moreland expresses two different opinions on the streams of trade; one that the main stream of trade was directed to the Red Sea and the Persian Gulf and the other that by 1500 the main stream of trade was from Malabar to the Red Sea.[3] His main argumen

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1. To quote W.H.Moreland, "He found the Indian Seas from Madagascar to the Straits of Malacca practically in the possession of the Moslem merchants. "Moreland ascribes this dominance first to the 'Arabs' but subsequently switches over to a broader term 'Moslem'. JRAS (April,1939),(2),pp.174,177; India at the Death of Akbar, London, 1920,p.198. Cf. M.N. Pearson, Coastal western India, New Delhi, 1981,pp.118-19.
2. JRAS (April, 1939), (2),p.174.
3. Ibid., pp. 174, 175.

is based on the fact that extent of Arabs' commercial activities did not go beyond East of Cape Comorin and it was the Malabar-owned ships which brought the commodities of South-East Asian to points of transhipment. He is also of the opinion that the Malabar-Red Sea line was under the practical monopoly of the Arabs.[1]

There is no doubt that till the Middle Ages the Arabs controlled a large part of the Indian Ocean commerce.[2] In 1441 Egypt-based Arab merchants sailed to Calicut particularly for the procurement of spices and other indigenous products.[3] The Arabs maintained a hold over shipping based on Hormuz where merchandise of the East of all description could be had.[4] At the mouth of the Red Sea Aden too remained important, its merchants being described as very rich by Ibn Battuta.[5] The city of Zabid in the vicinity of Socotra was quite prosperous where Arab merchants of Hejaz and Abyssinian and Egyptian merchants frequented it. Ethopian merchants brought their merchandise and carried spices and Chinese porcelain in return.[6]

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1. Ibid., p. 175; Ibid., (January, 1939), (1), p.64.
2. The Gazetteer of Bombay City and Island, Bombay, 1909,1,p.404.
3. Journey of Abder Rezzak, India in the Fifteenth Century,p.5.
4. Ibid., pp. 5-7.
5. Ibn Battuta, pp. 109-10.
6. Purchas, 9, p.91

By 1500 the Arabs' commercial activity had extended to South East Asia. TomēPires mentions the presence of Arab merchants at Malacca from Cairo, Mecca, Aden, Abyssinia, East African states and various other West Asian countries. The Arabs also traded with Javanese ports.[1]

Arab merchants traded mainly in pepper and carried the cargo from Malabar ato the Red Sea and to Hormuz in their own ships.[2] Varthema's statements suggest that volume of trade carried on between Calicut and Arabian ports was very large. This is also supported by Barbosa.[3] Calicut swarmed with merchants from Mecca, Arabia Felix, Syria, Turkey, Hormuz, Persia and also Ethopia.[4] Factors of Arab merchants permanently resided at Calcut.[5] Hormuz merchants too had their factors there.[6] These merchants shipped their cargoes in different directions, to the Red Sea, Aden and Mecca.[7] Except pepper, giner and cinnamon from Ceylon these merchants at Calicut bought the same goods which went to Gujarat.[8]

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1. The Suma Oriental, 1, p.174.
2. Merchants and Rulers in Gujarat, p.12.
3. Travels of Varthema, p.151. Cf. The Book of Duarte Barbosa, 2, p.75.
4. Ibid.
5. The Suma Oriental, 1, p.78.
6. Ibid., p. 44.
7. Merchants and Rulers in Gujarat, p.12.
8. Ibid.

It appears from Barbosa's account that Arab merchants of Mecca were formally forbidden entry in Bhatkal; but in spite of such prohibition their ships came to Bhatkal for spices.[1]

Arabs of the Red Sea and Persian Gulf came to Diu opium was brought to Diu from Aden by the Arab merchants.[2] Arab-owned ships from Aden and Mecca sailed to Ghogha.[3]

There were a good number of Turkish and Arab merchants in Bengal.[4] They appeared to have largely traded with the port of Satgaon(near Hugli). The city of Satgaon was very rich and had a population of ten thousand when Tom Pires visited it.[5]

Hormuz, much owing to its location as a hinterland and entrepot, attracted merchants from various countries. Her own trading communities were composed Persians and Arabs. Hormuz merchants had developed trade relations with many regions of India mainly on account of her supply of horses. They also traded in spices importes from many parts of India, in cloth of Cambay, Chaul

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1. The Book of Duarte Barbosa, 1,p.195.

2. D.F.Lach, India in the Eyes of Europe, Chicago, 1965, p.402. Opium produced in Egypt was in demand in many countries and it was equal said to be to the opium of Malwa and other places in India. But the question may arise as to why opium was brought to India in face of the equal indignenous quality procurable in India. The possibility only tends to suggest that there might have been difference in prices of the two products.

3. The Book of Duarte Barbosa,1,pp.134-5. Arabs based on Cairo and those of Mecca and Aden traded with the Kingdom of Gujarat when the Monsoon was not favourable to them to reach Malacca. Suma Oriental,2, p.269.

4. Suma Oriental, pp. 92-3.

5. Ibid.

and Dhabol and from Bengal. Hormuz's prominence has been widely recognised by all travellers in their accounts.[1] Horses brought to Goa from Hormuz were distributed to various region of India. On their return journey these Hormuz merchants carried rice, sugar, iron,[2] pepper, ginger and other spices drugs.[3]

Arab-owned ships frequently visited Aden where commodities of all kinds could be procured. Jiddah ships loaded cargoes of spices and drugs, cotton cloth of Cambay and carried them to Suez. There were merchants of Arabia Felix and 'Prester John' in Aden.[4] Mecca's trade relation with Malabar was in pepper and the Arab merchants of Mecca maintained friendly relations with the rulers of Malabar.[5]

The Arabs based on Cairo functioned as intermediaries between Europe and India. Commodities of Italy, Greece and Damascus brought by the Arab merchants to Cairo were taken to the Red Sea

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1. For items of trade, see The Book of Duarte Barbosa,1,pp.91-4; for its trade links, ibid.,p.73; places for precurement of horses and pearls, ibid., p.81; description of its hinterland, Voyages and Travels, London, 1903,1,p.312; prominence of Hormuz, India in the Fifteenth Century, Introduction XVIII; also ibid., Abder Razzak, pp.5-6.

2. Iron was also exported to West Asian countries from Bhatkal, The Book of Duarte Barbosa,1,pp.195-200.

3. Suma Oriental,1,p.58. Broadly speaking Hormuz had trade relatior not only with Goa alone but also Cambay, the kingdom of the Deccan, with the ports of the kingdom of Narasinga and Malabar. Suma Oriental,1, p.20.

4. The Book of Duarte Barbosa,1,p.54.

5. Ibid.,2,p.3. Beside Malabar ports the Arabs merchants also were very active on various ports of Gujarat. Arab merchants of Cairo and Aden came in great number to Cambay. Ibid., 1, p.257; Suma Oriental,1,p.41.

and thence transhipped in their own ships to Gujarat. Such cargoes consisted of gold, silver, quick silver, vermilion, copper, rose water, wools and brocades. These goods at Cambay were exchanged with the indigenous cotton cloth and spices from Malabar and Malacca.[1]

THE GUJARATIS

Gujarati merchants and navigators were also very prominent in the Indian Ocean trade c. 1500. Their ships were of larger size and had expert seamen to man their ships. Their pilots possessed much skill and did a great deal of navigation.[2]

Hindu Gujaratis were reputed easily to succumb to the will of their captor at Sea. But they also carried along men-at-arms to defend their ships.[3]

We do not know the faith of the Gujaratis whom Ibn Battuta witnessed in 1330 as carrying goods to Aden,[4] but there remains no doubt that by 1500 Gujarati Hindus and Muslims both traded extensively.[5]

After the decline of the Delhi Sultanate the only North Indian state that took keen interest in sea trade was Gujarat.

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1. The Book of Duarte Barbosa, 1, pp.54-55. Cf. Merchants and Rulers in Gujarat, p. 11.
2. Suma Oriental, 1, p.45; Cf. Alvares Cabral, p.111.
3. Ibid., 1, .p.45.
4. Ibn Battuta, p.109.
5. Coastal Western India, p.121; Merchants and Rulers in Gujarat, p.25.

Diu attained considerable significance while Cambay, Surat and Broach flourished as before.[1] Gujaratis were a strong element in the trade of the Malay Archipelago.[2] There were in Malacca in the early 16th century, at least, 1,000 Gujarati resident merchants and 5,000 "transient sailors".[3] Initially they traded with the Javanese ports; but after the establishment of the Malacca Sultanate the Gujaratis shifted their centre of activities to Malacca.

The Gujaratis mainly traded in spices which they carried in their own ships.[4] It appears that Gujarati Muslims traded more on the Aden-Gujarat-Malacca line.[5] Gujaratis sailed every year to Malacca with four ships of merchandise worth 15,20 or 30 thousand cruzados with a minimum of 15 thousand. From Cambay one ship a year sailed to Malacca with merchandise worth 70 or 80 thousand cruzados.[6]

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1. Ibid., p.25. See also Tibbets, p.394. The height of Cambay commercial activities may be gauged from the remark of Cabral who called it,"the Cairo of India". It is, however, noteworthy that Cambay by 1500 had attained considerable significance as compared to other ports of Gujarat. Cf.The Voyage of Alvares Cabral, pp.111-12.
2. Suma Oriental,1,p.174. On the eve of Albuquer que's attack on Malacca, the Gujarati ships even offered themselves to fight against the Portuguese. It was only owing to the added support of the Gujarati 'Moors' and others that Malacca could throw off as the dependency of the king of Siam. Jou de Barros(1496-1570) as cited by Hadi Hasan,pp.145-6. Malacca also had in its employ a Gujarati sea-captain. Suma Oriental,2,p.279.
3. Simkin,161;cf. JESHO, April,1973,16(1),p.244. Out of several trading communities at Malacca the Gujaratis constituted the largest group. Simkin,p.163.
4. Merchants and Rulers in Gujarat, p.14.
5. Merchants and Rulers in Gujarat, p.14.
6. Suma Oriental,2, p.29.

The Gujaratis maintained brisk trade with East Africa as well. The people of Sofala and the city states like Kilwa, Malindi, Pemba, Magadishu purchased Cambay cloth in exchange for gold, ivory and slaves.[1] On the Gujarat-East Africa route the carriers were Muslims as well as Hindus.

Gujarati merchants traded with Aden mainly in cloth. Barbosa was surprised to see there a great number of ships from Cambay.[2] Another bi-route from Aden led to the 'Cape of Guardafui' near 'Berbera'. The Cambay cloth was supplied to Berbera and Zaila also.[3] The Gujaratis also traded with Hazramaut.[4]

The Gujarati merchants were trading with Hormuz long before the Portuguese intrusion in the Indian Ocean.[5] They went every year to Hormuz. The main item which Gujaratis must have purchased and carried to Gujarat was horses which were in great demand there.

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1. JRAS (April, 1939), (2),p.175; The Book of Duarte Barbosa,1, p.8. Cf. Merchants and Rulers in Gujarat, p.12. Even after the advent of the Portuguese considerable volume of trade was carried between the north-east coast of Africa and Gujarat, chiefly by the Bohrah merchants of Gujarat and Cutch. Travels of Varthema, Introduction xlix.
2. The Book of Duarte Barbosa, p.33.
3. Ibid., pp.54-55.
4. Merchants and Rulers in Gujarat, p.12. The Gujaratis, in return carried European products available to them at Aden and adjoining ports and also the products of those regions. The Book of Duarte Barbosa,1,pp. 54-55.
5. 'Journey of Abdur Rezzak', India in the Fifteenth Century, pp. 5-7. Cf. Merchants and Rulers in Gujarat,p.11.

Pearson is of the opinion that Gujaratis operated on all 'international' routes in Asia with the exceptions of only two. They carried their own products like cloths,[1] indigo and opium and also the products of other lands, especially spices.[2]

There were Gujarati Muslim merchants on Western Indian coast. Albuquerque noted the Hindu "banyas of Cambay" trading with those parts. Pearson is of the opinion that the crews of the ships owned by Hindus, were largely Muslims.[3] The Gujaratis often sailed on long-distance routes. They sometimes kept themselves away from their homeland for quite a long period. For instance the ships of Rander[4] remained for years from their home in Gujarat.[5]

THE MALABARIS

Malabar was itself a producer of pepper and cardamon which

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1. Cabral admirably remarked the Gujarati merchants as, "merchants of cloth and of adorments and of jewel". The Voyage of Pedro Alvares Cabral, p.81.
2. Merchants and Rulers of Gujarat, p.10.
3. Ibid., p.14.
4. Mandelslo speaking of the inhabitants of Rander says that they were mainly from Navayat community, practising Islamic faith. They were either mariners or tradesmen. Rander itself was one of the oldest cities in southern Gujarat. It was situated on the right bank of Tapti, about two miles above Surat. This flourishing city was destroyed by the Portuguese general Antonioda Silveira in 1530 together with Surat. The latter recovered soon but the former could not. Mandelslo's Travels in Western India(A.D.1638-39), Bombay,1931,p.7 n.
5. Coastal western India, p. 121.

it exported by sea. Its great port of Cochin was a great intermediate port for trade between West Asia and the Malay Archipelago.[1]

By the 16th century a new community had emerged in Malabar, engaging in oversea trade. These were the Moplas, a community of Muslims.

The Malabaris, both Muslim and Hndu, traded with Malacca, at that time a major entrepot for the goods of Chinese and spice Islands. They owned their own ships. At Calicut, the Arabs purchased goods so brought by Malabaris from Malacco, while they also carried away pepper and other produce of Malabar.[2]

On the other hand, merchants from various ports of Malabar had traded with Aden from quite an early period. Ibn Battuta in 1330 observed merchants of Malabar frquenting Aden. Some of these merchants also lived at Aden.[3]

The Malabaris traded extensively with Kathiawad and Gujarat, as well as the Coromandel coast, Ceylon and Maldive Island.

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1. The Malabar pepper was far superior in quality to that grown in Malacca, Java, Zunda (Sunda ?) and Kanara. K.S.Mathew, 'Commodity Composition of the Indo-Portuguese Trade in the Early Sixth Sixteenth Century', Proceedings of the Indian History Congress, Bombay Session 1980, p.298. Tom Pires says that twenty thousand bahars of pepper were grown in Malabar. The major ports of call for this pepper besides Calicut were Karanganur and Cochin. Suma Oriental, 1, pp.82-3. Cf. India in the Fifteenth Century, Introduction xxxiii, xxxiv.

2. JRAS (April, 1939), 2, p.175. Muslim Malabaris were potential element in the society of the Malabar coast. Cf. Whiteway, p.77.

3. Ibn Battuta, p.109-10. On the Malabar-Red Sea and Malabar - Hormuz routes Muslim-owned ships predominated. Merchants and Rules in Gujarat, p.12.

From the description of European travellers it appears that the majority of the merchants in Malabar were Muslims.[1] Nairs were often found working with these Muslim as secretaries.[2]

As noted elsewhere the Malabaris were very good sailors. There was a caste of fishermen who were especially employed by Muslim shippers. There some wealthy people also (presumably Hindu) who collaborated with the Muslims in sea commerce.[3]

RESTRAINTS TO SEA-TRAVEL

The silence of ancient writers on Hindu seafaring, the rule laid out by the <u>dharmashastra</u> against travelling by sea has led some historians to suggest a stagnation in the navigational activities of the Hindus.[4] Enumerating various reasons for such restraints as embibed in <u>dharmashastra</u> A.L. Basham has arrived at the conclusion that the text probably only applies to the Brahmins.[5] But Simkin finds causes for Arab dominance in the Indian Ocean navigational activities in the stagnation of Hindu seafaring.[6]

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1. <u>The Book of Duarte Barbosa</u>, 1, p.
2. <u>Suma Oriental</u>, 1, p.82.
3. <u>Ibid</u>., p.84; Barbosa, 2, pp.3,64.
4. Cf. Simkin,p.84;Boxer,pp.44-5. Marco Polo says, "one who sails by sea was not admissible because such men were regarded desperate." Marco Polo cited in Varthema,p.15 <u>n</u>.
5. A.L.Basham, <u>Studies in Indian History and Culture</u>, Calcutta, 1964,p.162; for bans and penalities, <u>Ibid</u>.,pp.163-4.
6. <u>Travels of Varthema</u>, p. 152 <u>n</u>.

At the very outset the question may arise, was there any stagnation at all in the Indian seafaring ? Were not the Hindus travelling by sea ? Even if <u>dharmashastra</u> deemed it a pollution to travel oversea Hindu merchants and sailors nevertheless established settlements abroad ?

The Cairo Geniza documents refer to the presence of a number of Hindu merchants at Cairo.[1] The documents also record the sinking of the ships of one Patam Soami, driven to Berbera. There were a number of other smaller boats of the same person which safely reached Aden.[2] Patam Soami was the chief of the guild merchant and owned several ships. These ships were manned by Muslim seamen.[3] A 13th century Indian merchant, Jagadu, maintained regular commercial shipping with Persia. He also owned his own ships. His agent at Hormuz was an Indian.[4]

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1. Goitein, p. 338
2. <u>Ibid</u>., p. 349.
3. <u>Ibid</u>., pp.349-50.
4. R.S. Sharma, p. 249.

V

THE PORTUGUESE INTRUSION IN THE 16TH CENTURY

It was in the closing years of the 15th century that the Portuguese succeeded in their long search of finding a passage to India, by rounding the Cape of Good Hope. Armed with Papal Bulls granting monopoly of present and future conquests "from Capes Bojador and Nun, by way of Guinea and beyond, southwards to the Indies,"[1] the Portuguese were driven by an amalgam of impulses. It is a matter of scholarly debate how far their motives were religious or economic. Soon after da Gama's return D. Manuel summed up the objective rather neatly, "for our ancesters the main basis of this enterprise was always the service of God our Lord and our own profit."[2] Whether the Portuguese were still inspired by the 'crusading zeal' and their motives were mainly religious or predominantly economic their main rivals in the Indian Ocean continued to be Muslims — Arabs as well as non-Arabs, as we have seen in Section I.

The Portuguese successes were spectacular but the reason for them perhaps lies not in the 'crusading spirit' alone; it was more a result of their expertise and technical superiority in navigationa techniques as well as the weaknesses of their adversaries.

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1. C.R.Boxer, The Portuguese Seaborne Empire, 1415-1825, London, 1969, pp. 20-23.
2. M.N. Pearson, Merchants and Rulers in Gujarat, California, 1976, p.30.

In the Asian waters the Portuguese hardly encountered any resistance. Neither Egypt, Persia, Vijayanagar nor for that matter any other states or entrepots, such as, Ormuz and Malacca had any naval force. The Malayian _lancharas_ were single sail small vessels and the Javanese merchant-junks now operated only in the Indonesian archipelago and its close vicinity. Even the merchantmen belonging to Arabs and Gujaratis though large ocean going vessels were not equipped with artillery. For reasons yet to be fully investigated they could not stand up to the Portuguese carracks and galleons.[1]

In the Arabian sea the Portuguese first landed at Calicut, the small but very important state for trade particularly in spices. Right at the onset they made it obvious that trade in peace on the basis of equality with other merchants was not their intention. In the very first voyage they tried though unsuccessfully to get the Muslims merchants expelled from Calicut. They intended to defeat their rivals with ruthless force; hence there were explicit instructions for the second voyage (1500) to attack muslim ships at sight.[2] The merchants of Malabar ports responded by commercial sanctions and the Portuguese found it difficult to obtain cargo. This led to open hostilities and bombardment of Calicut by the Portuguese. They finally retreated in the south to Cochin, Firishta says on the authority of _Tuhfa-t-ul Mujahidin_

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1. Cf. Boxer, p.41, who attributes it to lack of use of iron in Indian Ocean shipping.
2. Carlo M.Ciopa, _Guns and sails in the Early Phase of European Expansion, 1400-1700,_ London, 1965, p.137.

that it was here that the Portuguese established their first fort in India.[1]

They now attempted to control the trade forcibly. The system of cartaz was introduced at least from 1502 if not before.[2] All ships operating in the Indian ocean were to take cartazes or passes, on payment, from the Portuguese governor or captain of a fort. However, for a while, under the influence of the first Vice-Roy de Almeida (1505-9) they were forced to confine their activities to the sea alone. The Almeida believed in the socalled 'blue water' policy — which he himself summed up in his oft-quoted advice to D. Manuel as follows, "as long as you may be powerful at sea you will hold India as yours; and if you do not possess this power, little will avail you a fortress on shore."[3] The Almeida established the Portuguese supremacy over the Asian waters, the only resistance offered by a joint Egyptian-Gujarati fleet off Diu in 1508 was avenged in 1509 when they were thoroughly crushed.

Afanso de Albuquerque, the next governor (1509-15) changed this 'blue water' policy altogether. He started establishing ports and carving out a sea-borne Empire. In fact, it was Albuquerque who made Estado da India or the Portuguese Indian empire a reality.

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1. Tarikh-i Firishta, Nawal Kishore, Kanpur, 1874, p.373.
2. Pearson, p. 41.
3. Ibid., p. 55

He wrested Goa from Sultan of Bijapur in 1510 and Malacca was taken in 1511, the next year, 1512 passed in defending Goa, beseiged by Turkish and Egyptian contingents supported by Bijapur, while Albuquerque was away capturing Malacca. In 1513 the attempt to take Aden for blockading the Red Sea route — the key commercial channel between the Mediterranean and India — failed, but the hegemony on Persian Gulf route was established when Hormuz was seized in 1515.

The ostensible aim of the Portuguese was the "search of christians and spices"[1] as King John II hoped, "for (the) kingdom (of Prester John) would serve him as a way-station on the route to India, from whence Portuguese Captains would bring back those riches heretofore distributed by Venice."[2] However, in fact the Portuguese had two main objectives, (i) to monopolize and control trade in spices, particularly pepper ___ the monopoly was to be that of the King of Portugal himself and (ii) to direct and tax trade in Indian Ocean for raising resources to buy pepper for Casa da India and finance Estado da India. An off-shoot of this was in Steengaard's words "production of protection and its sale."[3] In a sense, then, the Portuguese ambitions could be fulfilled by either a destruction of the Indo-Arab commerce or by its heavy exploitation through levy of tribute upon it.

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1. V.Magalhaes-Godinho quoted in Immanuel Wallerstein, The Modern World System, New York, 1974, p.326.
2. Ibid., p. 326.
3. Niels Steensgaard, The Asian Trade Revolution of the Seventeenth Century, Chicago, 1974,p.88.

we would now discuss the mechanism evolved by the Portuguese to achieve their aims, the inherent weaknesses and contradictions in their position, the extent of success achieved by them and the degree of disruption and disturbances created by their activities in the traditionally peaceful and free trade in the Indian Ocean.

The initial object of the King of Portugal was to obtain monopoly of pepper trade in Europe by shifting the centre for pepper distribution from Venice to Lisbon by destroying the Levantine trade carried by Arabs and Indian merchants. The Portuguese design for realizing this object was to seize control of Malabar's trade in pepper, which was a major though certainly not the only source of supply. They aimed at purchasing pepper cheaply for Casa da India and to sell it at almost monopoly prices in Europe thereby extracting high profits.[1] The main problem before them was that of payment, a problem faced by all other European companies afterwards. There was hardly any demand for European commodities in centres of pepper trade or production and for that matter anywhere in south-Asian. Portuguese brought some copper, quick-silver, coral and alum but these came from Red Sea also which further restricted the demand. Even copper was not a favoured import.[2] The Portuguese were thus, forced to

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1. Jan Kieniewicz, 'The Portuguese Factory and trade in pepper in Malabar during the 16th century', IESHR, Vol.VI, No.I, March 1969, p.64.

2. Jan Kieniewicz, IESHR, Vol.VI, no.1, 1969, p.70.

make payments in bullion, gold and silver. According to an estimate offered by Chaunu, "120 to 150,000 tons of spices were bought, (during the 16th century) almost without merchandise in return, for 150 tons of gold, which the weight of domination had seized from the feeble African societies, and a quantity of specie difficult to calculate, but not at all comparable to the 6000 tons of equivalent silver which remained to be made up.[1] This was not a happy situation for a small country like Portugal, especially in the early decades when the prices of silver in Europe were still considerably high.[2] The profit from pepper trade too was not available for reinvestment in purchases since it was spent on other needs of the sovereign. The result was an acute shortage of resources to finance pepper trade. The Portuguese answer to this difficulty was brutal force, used as a two-pronged weapon, to exclude the rival merchants from the fierce competition and to make money available by taxing trade in the Indian Ocean.

They tried to subjugate the rulers in Malabar and to control the pepper producers and merchants through them. The attempt failed in Calicut, the Zamorin gave them concessions but was not ready or able to go full way with them. Kunhi Ali's raids and attacks caused further trouble. In Cochin they succeeded in

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1. I. Wallerstein, p.329, _f.n._
2. F.R.Braudel and F.Spooner, 'Prices in Europe from 1450 to 1750' _The Cambridge Economic History of Europe_, ed.C.Rich & Wilson, px468 Vol.IV, p.460, fig.6.

forcing the rulers to cooperate. However these rulers were neither in full control of the pepper producing region nor of inland trade routes. The elemination of previous rivals from Arabian Sea, therefore, did not necessarily imply advantageous terms of trade for the Portuguese. The attempt to monopolise the supply of Malabar trade, therefore, failed. The Portuguese also failed in blockading the trade in spices carried by the Indian and Arab merchants. Hormuz was seized in 1515 and the Persian Gulf route was brought under control but the Portuguese remained unsuccessful in taking Aden in spite of two determined attempts, first by Albuquerque in 1513 and then by Castro in 1548. It was a crucial weakness because as long as Aden was not taken the Arab and Indian merchants could not be eliminated. These Arab merchants coming from ports ranging from Cairo to Bab-al Mandab and the Indian merchants mainly from Gujarat proved to be stubborn rivals. They reached the centres of supply early, bringing cash and cloth from Gujarat that was much in demand in Malabar as well in the spice islands, made purchases, reinforced their ships and left much before the Portuguese armada could start on its vigil.[1] There is evicence to suggest that the Portuguese blockade of the Red Sea was hopelessly in effective and the Arab and Indian merchants carried their trade undeterred. In 1530 the Portuguese fleet of 10 well armed ships laid a careful blockade but to their

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1. Wallerstein,

chagrin the ships of their competitors had already got back to Mocha. In 1538 again the same story was repeated. In 1562 the armada spotted no less than 50 cargo ships belonging to Arabs and Indians but failed to stop a single one. In the 1570's that the Portuguese confessed the futility of their blockade effort and discontinued it.[1]

Another device used by the Arab and Indian merchants was trans-shipment during nights. They possessed small ships adapted to coastal and river trade. These ships were used in shipping in river estuaries and bays and enabled the bigger ships to elude the Portuguese.[2]

The Levant trade - the mainstay of Indo-Arab commerce — thus retained by and large its significance throughout the course of the 16th century in spite of the disturbances created in the Arabian Sea by the Portuguese. The prosperity of the commerce on this route increased during the 2nd half of the century, but even during the first half it not only survived the Portuguese onslaught but remained almost as important as the Cape-route. The data of pepper export to Lisbon and to the Levant, collected by Jan Kieniewicz supports this assumption. The Table is reproduced below.[3]

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1. Pearson, pp. 46-7
2. IESHR, vol. VI no. I, p.79
3. IESHR, vol. VI, mo. I, p.62.

Years	To Lisbon	Through the Levant
1501-03	0.40	1.1
1504-09	1.20	1.0
1510-13	0.80	0.7
1514-22	1.60	0.9
1523-36	0.78	1.0
1537-49	1.30	1.1
1550-56	1.00	1.0
1557-71	1.20	1.4
1572-85	1.00	1.0

The royal Portuguese monopoly of the pepper trade thus never became a reality and the Levant trade continued. The Portuguese failed to overcome the basic economic weakness by their naval supremacy. The failure was also an outcome of the conflicting aims, the tussles between the interests of the *Estado* and the factory, and the corruption of the Portuguese officials for whom their private trade was much more important than the revenues of the king.

Another factor responsible for Portuguese failure was the growing power of the Ottoman Turks. They conquered Syria and Egypt between 1514 and 1517, occupied Iraq in 1534-5, took Aden in 153 and Basra in 1546. This greatly thwarted Portuguese ambitions in the Red Sea. The Muslim merchants could, therefore, not be wiped out from the spice trade to the Levant through the Red Sea route.[1]

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1. Boxer, p.59.

However, a new element that probably helped in maintaining the role of Arab and Indian traders in spice trade was the fact that pepper production seems to have responded to growing demand. The 16th century saw a rapid development in pepper production. Tom Piers estimates that the pepper production increased by 200 to 275% between 1515 and 1607.[1] This became possible because of the technology of pepper production:[2] "Once planted, it does not need to be cared for".[3] There was a constant increase in demand in the whole of India, from Vijayanagar, Bijapur, Golkunda to Mughal Empire extending to Bengal. There was a parallel rise in demand in Arabia and the Ottoman Empire. A large part of the supplies were absorbed in Red Sea itself, besides the re-exports to the Levant.[4]

The increase in pepper production that coincided with the Portuguese advent is usually attributed to their share in trade. Godinho[5] and C.R.Boxer[6] both tacitly suggest this. It, however, seems difficult to agree with this opinion. The supply to Europe did not increase through the Portuguese. No new markets were gained through the Portuguese they shared only in

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1. The Suma Oriental of Tome Pires, vol.I&II, Hakluyt Society, nos. 89-90, London, 1944.
2. Wallerstein, p. 331.
3. Godinho quoted in Wallerstein, p.332.
4. Jan Kieniewicz, IESHR, vol.VI, no.I, p.72.
5. Godinho cited in Wallerstein, p.331.
6. Portuguese Seaborne Empire, p.89.

the existing pool of trade by merely attempting to change the direction and personnel of trade without affecting the volume. Instead of pepper reaching through the Indian, Arab and Italian merchants via the Levant route, it was to reach Europe carried by the Portuguese by the Cape-route. Even this attempt met with only partial success.

There is no reason to believe that pepper consumption in Europe increased substantially in Europe over the 16th century; nor did the price of pepper fall. Therefore Jan Kieniewicz's assertion that the increase in production occured to keep pace with demand in Asia appears more valid.[1] The larger demand and hence supply in India and Red Sea region implied larger share of Arabs and Indians in the spice trade in spite of Portuguese interference.

The Portuguese tried to operate in Asian waters from a position of dominance based on naval power. Their attempt was to destroy rivals particularly the Arabs and Indian Muslims by controling and caring the trade. The device used was the cartaz system. Sheikh Zain-ud-Din has described the cartaz-system neatly in his Tuhfat-ul Mujahidin,"Every vessel, however small, being provided with a distinct pass ---- And upon each of these passes a certain fee was fixed, on payment of which the pass was delivered to the master of the vessel, when about

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1. IESHR, vol. VI, No.I, p.61

to proceed on his voyage ----- if they fell in with any vessel, in which this letter of marque, or pass, was not to be found, they would invariably make a seizure both of the ship, its crew and its cargo."[1] The fee charged for the *cartaz* was not high but it ensured that the ship was to trade only to a Portuguese fort or had to call at a Portuguese fort to pay duties on its onward as well as return journey. A cash security had to be deposited at the fort from where the *cartaz* was issued to guarantee that the ship would in fact return to paymam duties. There were further conditions for cargo and passengers. In addition to restrictions on carrying arms and munitions, iron, copper and wood could met be a part of the cargo since these could be used in building or repairing enemy ships. No Turks, Abyssinians and 'Muslims' (? Arabs) were permitted to be on board. Neither any spices and pepper could be carried.[2]

The system of *cartaz* was quite profitable since the confiscated cargos were lucrative prizes for the Portuguese officials. In 1540 a Gujarati ship was seized because judging from its position it was not aiming towards the destination mentioned in the cartaz.[3]

The Portuguese system of control over Asian waters was

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1. Pearson, p.40.
2. *Ibid.*, p. 41.
3. *Ibid.*

based on a claim of fortresses and a fleet of two squadrons, one to block the Red Sea and the other to patrol the western coast of India.[1] But as we have discussed above, the blockade of the Red Sea was never effective. Even in the Arabian Sea a number of ships succeeded in avoiding the conditions imposed by _cartazes_. The Portuguese, therefore, sought to introduce the _cartaz-armada-cafila_ system on all channels of sea-trade. By 1560 it was a well established practice for the ships operating on the Indian West coast to move in convoys under the protection of the Portuguese fleet.[2] This ostensibly was for safe conduct but actually controlled the direction of commerce as well as the payment of custom duties. The _cafila_ system made immense (and devastating) impact on Asian trade,[3] greatly harming the interest of Arab and Gujarati carriers.

Yet the Portuguese never succeeded in controling fully the trade in Asian waters. Even in their prime object — the ban on all Red Sea trade — they were not successful. The restrictions on trade with this hostile Muslim area were not practical and the confession of the failure did not take long to be made. The Portuguese themselves began to license trade from the Red Sea to Diu from 1537, to Hormuz from 1539, to Cannor from 1546, and to Goa itself from 1556.[4] According to Pearson the

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1. Godinho cited in Wallerstein, p. 327.
2. Pearson, pp. 45-7.
3. _Ibid_., p.40.
4. _Ibid_., p.51.

Portuguese system never became 'so irksome' due to the fact that the port revenues were more crucial to Portuguese system than any gains to be made by them from the stoppage of the Red Sea trade.

The growing profits of the Portuguese in private trade in Asia and the amount received from the custom receipts from this trade and the widely prevalent corruption of the officials had its effect on the Portuguese system which began to be increasingly ineffective in the latter half of the 16th century.

The emergence of the Portuguese in the Indian Ocean was certainly not a mere addition of another group of merchants competing with the Arab and Indian merchants. The merchants carrying the trade peacefully in Asian waters were faced with totally unfamiliar opponents, "not merchants —— private enterpreneurs —— but a formidable naval power, acting, in the name of a foreign state, on behalf of its merchants and itself.[1] They picked up Muslims in general and Arabs in particular as their enemies and the main disturbance they created was their partial ouster which they effected "by brute force and not by peaceful competition".[2]

In Panikkar's view the gap created by the partial ouster of the Arab merchants by the Portuguese <u>cartaz</u> system was not

1. Godinho quoted in Wallerstein, p. 330.
2. Boxer, p.46.

filled up by the Portuguese themselves but mainly by the Indian merchants who "were able to carry on their trade without the competition of Arab merchants and in that sense the Portuguese monopoly may be said to have helped them."[1] This, however, pre-supposes the total elimination of Arabs from the Arabian Sea and the unlimited capacity on the part of Indian merchants to expand their maritime trade. On the contrary, it seems that the Muslim merchants including Arabs gradually devised means to co-exist with the Portuguese through evasion or bribery. The big merchants were less affected; it was easier for them to survive in trade in spite of the Portuguese interference. A large number of rich muslim merchants are reported to have left Cochin for Calicut when the Portuguese dominance in Cochin became established,[2] but they continued carrying trade undeterred. As we have seen, the Portuguese system itself was not effective and strong enough to impose Portuguese control of either the long distance trade with Europe that was but small compared to the vast trade of Asia[3] nor to monopolise trade in the Indian Ocean. In Vanleur's words they "did not introduce a single new economic element into commerce of South Asia ---- The Portuguese regime only introduced a non-intensive drain on existing structure of shipping and trade."[4]

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1. K.M.Panikkar, Asia and Western Dominance, London, 1953,p.53.
2. Tuhfat ul Mujahidin cited in IESHR, Vol.VI, part I, p.80.
3. Trevor-Roper, Historical Essays, New York,1966,p.170.
4. J.C.Van Leur, Indonesian Trade and Society, Hague, 1955, pp. 118-119, 165

By the 1530s the Turks became active again in the Persian Gulf and the Portuguese share in carrying trade started declining. By 1560 Alexandria was exporting as much spices to Europe as in the late 15th century.[1] The story afterwards is of a progressive decline of Portuguese power, the union of Portuguese crown with the crown of Spain, (1580), the decline of Antwerp (through which Portuguese borne spices were distributed) 1585 all contributed to the decline of Portuguese in Indian Ocean, even before the appearance of rival trading companies from the two north European, protestant countries, Holland and England. Before their arrival, the chief beneficiaries of the Portuguese decline were the Indian and Arab merchants of the Arabian Sea and their Venetian and Genoese counterparts of the Mediterranean.

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1. Frederic C.Lane, The Mediterranean Spice Trade: its revival in the 16th century, _Venice and History_, Baltimore, 1966,p.33.

VI

INDO-ARAB TRADE AND THE IMPACT OF DUTCH AND ENGLISH SUPREMACY (c. 1600-1750)

The 17th century witnessed substantial changes in Asian trade ; new participants appeared in Asian waters and the Portuguese tended to pass from the stage. A number of old centres of maritime trade decayed and new entrepots emerged, with certain important changes in trade routes.

During the course of the 16th century the trade in the Asian waters had adjusted itself to the new realities imposed by the Portuguese. The Asian merchants largely retained their trade owing to the inherent weaknesses in the Portuguese system.[1] The Portuguese monopoly of pepper trade, however inefficient it might have been was the core of Portuguese commercial power. But this situation did not endure beyond the 16th century owing to the breach of that monopoly by the Dutch and the English.

The dawn of the 17th century was marked by the establishment of two north European trading companies. The English East India Company was established in 1600 and the various Dutch companies merged to from the VOC in 1602. It was natural that the emergence of these companies should affect the entire pattern of Arabian Sea commerce. The Dutch were first to strike at the Portuguese

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1. See preceding chapter.

Realising their naval superiority over the slower and bulkier Portuguese carracks,[1] they struck at the weakest and most crucial spot. In the outset they tried to avoid an open challange in the Arabian Sea and directed their ships towards the Indonesian archipelago and the spice Islans.

While it was possible for the Dutch to reach the spice Islands avoiding India and thus bypassing the Arabian Sea, the interlocking nature of Asian trade created an immediate impact on the Arabian Sea trade. The Dutch monopolised the Sumatran pepper, and by supplying it in large quantities in Europe drove out the superior Malabar pepper from the European and even Ottoman markets.[2] This meant a drying off of the brisk trade in pepper which had so far been conducted through the Red Sea and the Levant. Moreover, the compulsions of their trade in south-east Asia brought the Dutch directly to India. The European commodities had hardly any market in these Islands. These spice Islands provided a market for cotton goods and foodgrains in exchange for their produce. The Dutch thus were forced to seek a foothold in south India to obtain cloth; still their interests remained focused on south-east Asia. But the fact that Malabar pepper competed with the inferior Sumatran pepper which the Dutch monopo-

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1. C.R. Boxer (ed.), The Tragic History of the Sea 1589-1622, The Cambridge University Press, 1959 (Hakluyt Society), p.?.

2. Cf. Moreland, Akbar to Aurangzeb, New Delhi, 1972, pp. 15 ff; Steensgaard, The Asian Trade Revolutions, p.

lised first drew the Dutch to the Arabian Sea, and to attempt to cut off the export of Malabar pepper to the Red Sea altogether. The Dutch ultimately succeeded in this endeavour too, seizing Cochin in 1659-63 and imposing their monopoly over Malabar pepper as well.

The Portuguese did not only face the Dutch onslaught, a number of other forces too combined together to hasten their passing away. The Turko - Persian conflict resulted in the decay of the silk trade through Aleppo and therefore, Hormuz declined. The Safavid attempts to develop Bandar Abbas (Gombroon) too contributed to the reduced significance of Hormuz. In 1622 the Persian and English joined forces and captured Hormuz from the Portuguese. The seizer of Muscat by the Arabs in 1647 completed their rout in the Persian Gulf.

While to the Dutch the Arabian Sea area was a zone of secondary interest, to the English East India Company it turned out to be its primary concern, at least for most of the 17th century. The English Company was unable to rival the Dutch in south-east Asia and so they turned to the Mughal Empire and tried to get hold in the Arabian Sea. A permanent English factory was established at Surat in 1613,[1] four years prior to the opening of the Dutch factory there. By the end of the 2nd decade of the 17th century the English trade with India was to the tune of half a million pounds sterling.[2]

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1. <u>Letters Received by the East India Company from its servants in the East</u>, 1613-15 ed. W.Foster, London, 1897, 2, pp. 103, 160.
2. Bal Krishna, p. 282.

One of the major sources of early conflict between the English and the Indian merchants and the Mughal authorities origionated in their attempt to participate in Gujarat's trade with the Red Sea. This the Mughals would not agree to; and the conflict led to the English plundering Indian ships calling on Red Sea ports in 1612 and causing considerable though temporary loss to the Gujarat trade. The Gujarat trade had come to be confined mostly to the Arabian Sea since the trade with south-east Asia sharply declined by the 2nd decade of the 17th century.[1] It was thus natural for the Gujarati merchants to offer stiff resistance to any new rivals in the Red Sea trade. The major object of the English, as late as the third voyage, in 1607, was to explore the Red Sea markets, especially Aden; the potentials of the direct trade with India were yet to be fully realised.[2] Thus the English East India Company's direct interference struck Indo-Arab commerce adversely precisely when the Dutch by their monopoly of Sumatran pepper were also causing profits to decline in this commerce.

By the turn of the second decade, the English began gaining a foothold in the Gujarat trade. Middleton's attacks on Gujarati ships and Best's successful defence against the Portuguese caused some change in the attitude of the Mughal authorities.

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1. The contemporary English evidence suggests that the Gujarati trade to Achin stopped in 1615, there was however, some revival after 1815.

2. <u>From Akbar to Aurangzeb</u>, p. 34.

The Mughal Portuguese war and the hostilities that followed (1613-15), the siege of Daman by the Mughals and attacks by the Portuguese on Gujarat ships too worked in favour of the north European Companies. The Dutch in 1614 received even an invitation from the Gujarat port officials to attack the Portuguese and helped the Mughals in taking Daman.[1]

To keep the English out of the Red Sea trade the Gujarat merchants resisted them in Mokha as well and were important enough to succeed at least temporarily. At their instance, in 1610, Middleton failed to get any privileges at Mocha.[2] But this success in the face of English superiority on the high seas was bound to be short lived. The English were determined to secure a foothold at Mocha, and through the show of power on the high seas, by seizing and plundering Gujarat ships carrying Portuguese cartazes, they broke down all resistance. In 1618 they succeeded in procuring a farman from the Pasha of Sana allowing them trade with Mocha.[3]

In 1620's the Zaidi Imams of Sana ended the Turkish rule in Yemen, and the Imam's port of Mocha began to flourish at the expense of Aden which declined rapidly due to Turkish maladministration. The privileges at Mocha thus were very timely and provided the English with an opportunity to gain an edge over others in the Red Sea trade.[4]

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1. Letters Received, 2, p.171.
2. Purchas, 3, p.31.
3. English Factories in India 1618-21, p.34.
4. English Factories in India 1624-29, p.354.

Having established a foothold at Mocha and Surat, the East India Company attempted to become carriers between Surat and Mocha but again the Gujarat merchants opposed the move and refused to send their goods on board English ships.[1] The English retaliated and ordered seizer of Gujarat ships, sailing on Portuguese cartazas.[2] Since the Gujarat merchants were unable to face the challange on sea they resisted to other methods. In 1619 a general boycott was observed and the English failed to attain even a yard of calicoes or any other merchandise suitable for the Mocha market.[3] Under the pressure of the Gujarat merchants the Mughal authorities in 1620 revoked the permission to the English to import corals from the Red Sea.[4] The English answer to these was again the use of brute force on the open sea. Ships belonging to Gujarat merchants as well as Prince Khurram were seized,[5] and the Red Sea trade of Gujarat was badly affected. As a result the local authority were sufficiently cowed down to permit the English to carry on their trade.[6] The English East India Company thus established its right to participate in the Red Sea trade. The Gujarat merchants too were forced to reconcile themselves to this new participant. In 1621 the merchants from Ahmadabad started sending their merchandise to Mocha on English ships on freight.[7]

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1. English Factories in India, 1618-21, p.20.
2. Ibid., p.56.
3. Ibid.
4. Ibid., p.165.
5. Ibid., p.175
6. Bal Krishna, p. 114.
7. English Factories in India, 1618-21, p.350.

In 1621 the Dutch too tried to follow the English example and captured Gujarat ships in the Red Sea,[1] and forced the merchants to take licences from them on payment.[2] The troubles contained during 1622-23 when the English again started attacking Gujarat ships. Even the vessels that had licences issued by the English were not spared. The ships belonging to Tavakkul Ali and Shivaji Baniya were captured.[3] In 1623, Ganjbar, carrying 100 Gujarat traders 'of quality' on board was captured.[4] The Mughal authorities at this time were too pre-occupied with Khurram's revolt to take cognizance of these incidents. The merchants were thus left to their own devices. The chief merchants Hariji Baniya and Khwaja Jalaluddin Mirza Mahmood and others negotiated a settlement.[5] The English wrenched a number of concessions.[6] This further increased their appetite and attacks and seizers of vessels belonging to Gujarat merchants continued. It was only in 1624 that the Mughal officials paid heed to the merchants, persistent complaints, all the English factors at Surat were arrested[7] as a result the attacks on Gujarat shipping subsided. A new adjustment was worked out, as both the contenders realised each other's strength and weaknesses as their own. Though the English had superiority on the seas and the Gujarati shipping was on their

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1. English Factories, 1618-21, p. 324-5.
2. Ibid., p. 324.
3. Ibid., 1622-23, p. 284.
4. Ibid., p. 194.
5. Ibid., p. 200.
6. Ibid., p. 317.
7. Ibid., 1624-29, p.5.

mercy, yet for credit facilities and smooth functioning in the Gujarat markets they were more or less dependant on the cooperation the merchants at Gujarat. A settlement was thus made, among the signatories were the prominent merchants including Muhammad Saleh Tabrezi, Nizamuddin, Mahmud Ali Isfahani, Ali Mashhadi, Virji Vora and Hari Vaisya.[1] The Red Sea trade thus was salvaged for the Gujarat merchants to some extent.

However, the privileges enjoyed by the English at Mocha adversely affected the trade of the Indian merchants. This crowned the general set-back suffered by Gujarat merchants' trade with the Red Sea as a result of the arrival of the Dutch and the English. Already in 1626 the Dutch factor Pelsaert noted : "All merchants from whatever country they come, complain bitterly. Portuguese Moslems and Hindus all concur in putting the blame for this state of things entirel on the English and on us, saying that we are the scourges of the Sea and of their prosperity. Often enough, if we notice any short-coming, and blame them, or threaten them, for it, the leading merchants tell us they heartily wish we had never come to their country."[2]

Of the navigation seasons Pelsaert says : "Two (ships) of king's usually clear in February, and sail from river in March, carrying goods on freight for anyone who offers; they reach Mocha at the end of April, where their goods may have to lie over a year for want of buyers, but the ships start on their voyage in August, unless one is destined for Suez or Mecca (Jidda) in which case it winters at Mocha, and the goods are sold at leisure."[3]

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1. *English Factories in India*, 1624-29, p.30.
2. Pelsaert, *Jahangir's India*, tr. W.H.Moreland, p.40.
3. *Ibid.*, p.

The fall of Hormuz in 1622 generally established the English strength in the Arabian Sea. But the Dutch too extended their trade to Persia in 1623 and having better financial resources and spices to sell in Persian markets they began to rival the English. The Gujarati merchants too gained by the disappearance of the Portuguese control,[1] Persian merchants also started visiting Surat.[2] The Persian port Bandar Abbas (Gombroon, now replaced Hormuz.

In 1620s the hostilities between the Mughal Emperor and Persian provided a further fillip to Persian Gulf trade. Due to the stoppage of overland trade between the Mughal and Safavids empire,[3] much of the trade was directed to the Gujarat ports. When the Portuguese attacked the Gujarat shipping in the region,[4] a shortlived alliance was formed between the Dutch and English and in 1625 they inflicted another defeat on the Portuguese.[5] The alliance lasted untill 1629 but it provided security to the Gujarat ships. In 1626 the Anglo-Dutch fleet escorted h three Gujarat junks back to Surat.[6]

The volume of Gujarat trade with Persia was so high that

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1. English Factories in India, 1622-23, p.186.
2. Ibid.
3. Ibid., 1623-24, p.180.
4. Pelsaert, p. 40.
5. Glamann, p. 115
6. English Factories in India, 1624-29, p.48.

apparently the Gujarat shipping was not sufficient to cope with it. The Gujarat merchants forced the Dutch ships to unload rice and cotton and carry their goods to Bandar Abbas. Similarly the English too were compelled by Hari Vaisya and Virji Vora to transport goods of Surat merchants to Gulf ports or to repay the loan of more than 30,000 laris the English owed to them. The English had to comply.[1] The Gujarat trade with the Gulf flourished and the English had to face stiff competition from the Gujaratis at Bandar Abbas.[2] Though they gained huge amounts as freight their own trade suffered. When they tried to refuse carrying goods belonging to Gujarat merchants they were forced to relent.[3] The strength and hold of the Gujarat merchants was such that the English had to provide escort to Gujarat junks. In 1629 they escorted 6 Surat junks to Persia.[4]

It appears that after the 1620s Gujarat and other Asian merchants re-asserted their position and tide over the initial shock and setback to Arabian Sea trade. They were forced to concede some share to new rivals, the English and the Dutch, especially in the carrying trade. On the whole the larger part of the trade of the Arabian Sea was retained by the Indian shipping

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1. English Factories in India, 1624-29, p.306.

2. In 1628 the English earned 3400 laris by way of freight. English Factories in India, 1624-29, p.328.

merchants in spite of the flutter in the first decade of the 17th century. If the European ships were more safe the freight rates on Indian ships were much lower, by almost a half.[1]

It does not seem thus possible to agree with Neils Steengaard's thesis that the emergence of North European Companies in the Arabian waters simply destroyed the trade of the Asian merchants the so called 'peddlers'.[2] According to Neils Steengaard in 1620's the Dutch and English share in the Asiatic trade rose so much that the Asian peddlers were simply forced to pave way for the new enterants. There was now a direct international trade through the Cape of Good Hope, which increasingly replaced the levant route and an 'Asiatic Trade Revolution' took place.[3]

Our evidence, however, suggest that contrary to this assumption the trade in the Asian waters remained largely with the Asian traders; they only conceded some share to Europeans who were to depend on Gujarat merchants to a great extent not only for the access to the market but also for credit facilities. The Arabian Sea trade thus only readjusted itself to new realities and no change meritting the designation of a revolution took place.[4]

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1. _Cambridge Economic History of India_, 1, p.417.
2. Van Leur,
3. Neils Steensgaard, p. 11.
4. Ashin Das Gupta, _Proc. Indian History Congress_, 35th Session, pp. 99 ff.

The Gujarat famine of 1630 adversely affected the Arabian Sea Trade but the overseas commerce picked up quite soon. By 1633 the Gujarat ships were back again at Mocha.[1] Zahid Beg and Shahbander of Surat too resumed their trading activities.[2] The re-emergence of Aden too helped in the recovery of Red Sea trade. The Arabs who captured Aden from the Ottomans in 1627, tried to attract trade to Aden by greatly reducing the custom duties. It had the desired effect; in 1636 eight Gujarat ships reached Aden.[3] The Red Sea trade, however, suffered many ups and downs.

In the late 1630s the English resumed their piratical activities,[4] this rekindled the hostilities between the English and the Mughal authorities.[5] This disruption of links between Mocha and Cairo owing to Turko-Arab conflict further affected the Red Sea trade.[6] But the Persian Gulf trade picked up as a consequence. Basra gained in importance more so because the Mughal Emperor had forbidden the trade with Bandar Abbas. The Gujarat goods now reached Bandar Abbas and the Mediterranean world via Basra.[7] The Red Sea trade too in spite of setbacks continued. While the smaller merchants withdrew due to the risks of piracy, ships belonging to merchant princes such as Virji Vora

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1. English Factories in India, 1630-33, p.198.
2. Ibid., 1634-36, pp. 295, 300, 301.
3. Ibid.
4. Ibid., pp. 21, 22.
5. Ibid., p. 23.
6. Ibid., 1637-41, p. 242.
7. Ibid.

and Zahid Beg continued to frequent Mocha and other Red Sea ports.[1] In 1647 the Dutch attempt to monopolise Red Sea trade and their embargo on Gujarat ships further disturbed the trade in the region.[2] The Gujarat merchants were so alarmed that they refused to take the risk of sending their goods even on English ships.[3] The English carrying trade thus suffered; this coupled with the detoriating economic situation at Mocha forced the English to close down their factory at Mocha in 1661.[4]

The English faced rough weather in the Persian Gulf as well. The Dutch who were financially better off than the English and had a large number of ships in their fleet started outstripping their trade in the Gulf. The Dutch slashed down their freight rates to 1/3rd of the freight charged by the English and drove away the English from the carrying trade.[5] But the English carrying trade soon recovered owing to the Dutch attacks and embargos on Gujarati shipping. In face of these attacks the Gujarat merchants preferred English shipping.[6] When the war over Qandhar began again in 1648, the Persians seized five Gujarat ships including one belonging to the Emperor. This Perso-Mughal

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1. English Factories in India, 1642-45, p. 161.
2. Ibid., 1646-50, p. 144.
3. Ibid., p. 173.
4. Ibid., 1661-64, p.42.
5. Ibid., 1646-50, p.42.
6. Ibid., p. 235.

conflict further helped European merchants in the Gulf. The Mughal authorities tried to resist the shipping away of this lucrative trade into the hands of the European contenders. In 1652 the Surat officials prohibited the transport of goods to Bandar Abbas by the English.[1] The Dutch attempt to avoid the similar restriction failed, and the Mughal Emperor refused to give them permission for continuing their carrying trade he pointed out that this would be against the interests of his own merchants.[2] But the Gujarat shipping was not destined to gain out of these deliberate policy. The war between the Dutch and the Portuguese,[3] and the Dutch and the English[4] created such a disorder a in the Gulf that the Gujarati shipping almost ceased to ply[5] in 1657 not a single Gujarat junk visited any Persian Gulf port.[6]

The troubles endured during the 1660s as well. The English and Dutch refused to carry the cargo of Gujarat merchants on freight. The situation worstened much that the Armenians and Persians left Surat for Bander Abbas.[7] The Gujarat trade with Persia and Persian Gulf ports declined sharply.

A contributing factor in the disruption of Persian Gulf trade was the rise of Yarubis. Muscat fell to Yarubis in 1650 and they not only swept away the Portuguese but appeared as a

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1. English Factories in India, 1651-54, p.104.
2. Ibid.
3. Ibid.
4. Ibid., p.13.
5. Ibid., pp. 223, 183.
6. Ibid., 1668-69, p.5.
7. Abbe Carre, The Travels of Abbe Carre in India, 1672-74, London, 1948, 3, p.795.

a real pirate force in the area. Most interestingly this new Arab maritime power was based on ships built for it at Surat. This arrangement (involving repairs of ships at Surat as well) should have provided some security to Gujarat shipping; but the Yarubis seem to have been quite unpredictable in these matters.

The story of the Red Sea trade was somewhat different. Contrary to the decline of Gujarat trade in the Persian Gulf the Gujarat merchants trade with the Red Sea ports flourished during the 2nd half of the 17th century. After the closure of the English factory the Gujarat shipping picked up. The English themself started using Gujarat vessels, in 1662 they hired a ship from Beni Das to transport their goods to Mocha.[1] The shipps belonging to Armenian merchants too were used by the English.[2] The Red Sea market came back fully into the hands of Gujarat merchants in 1660s. The Gujarat trade with the Red Sea received a further impetus since the English found it cheaper and convenient to obtain Mocha and Red Sea goods at Surat for home-wards voyages.[3]

Trade in Mocha coffee developed particularly. The Gujarat merchants brought coffee from Mocha to Surat. It was here bought and sent by the English East India Company to England.[4]

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1. English Factories in India, 1661-64, p.109.
2. Ibid., p. 189.
3. Ibid., p. 188.
4. Ibid., 1655-60, p.241; The Cambridge Economic History of Europe, 4, p.296.

During the 1680s the Dutch East India Company too followed suit, they too began buying Arabian coffee at Surat.[1] After the closure of their factory at Mocha in 1684,[2] they were totally dependent on Surat supplies for onward shipments to Europe. The demand was so high that the Surat merchants started also obtaining Abyssinian coffee though it was inferior to the Mocha coffee.[3] The Asian merchants in general and the Gujarat merchants in particular maintained their control over the Red Sea trade down to the early decades of the 18th century. Merchant princes such as Mulla Ghafur, Muhammad Saleh Chellaby and many others flourished. Mulla Ghafur who was a Bohra and came from a modest background achieved a runaway success. At the turn of the 18th century he possessed a fleet of 13 seagoing ships. He had a bitter feud with the Chellabies. This finally led to the ruin of the Mulla family in 1730. However, during his heydays Mulla Ghafur achieved remarkable success even against the Europeans while at the turn of the 18th century he launched a crusade against the <u>frangis</u> and persuaded the Arabs, Persian and Turks to join him. All trade with the Red Sea was suspended till the Europeans were to relent and pay compensation for their piracies. While the Mulla himself gained financially, he was unable to eliminate European

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1. K. Glamann, <u>The Dutch Asiatic Trade</u>, Hague, 1954, p.187.
2. <u>Ibid</u>., p. 186.
3. <u>Ibid</u>., p. 191.
4. Ashin Das Gupta, <u>Indian Merchants and the Decline of Surat, 1700-1750</u>, pp. 48-49.

piratical activities when the Dutch blockaded Surat. Surat was forced to compromise.

It was thus during the first half of the 18th century that the European gradually increased their control of the Arabian Sea and athe Asian merchants began to see their preminent position finally ship away. The Chellabies, the Ghafoor family and other Asian merchants found it hard to maintain their trade till 1730s, whereafter the decline of Surat began in right earnest.[1]

One of the contributory factors for the decline of Arabian Sea trade was the piratical activities of the Yarubis. During the reign of Saif Ibn Sultan (c. 1692-1711) the Yarubi navy became a powerful force and Muscat war-ship challenged the Gujarat merchants. The trade received a further setback when the Shah of Iran prohibited the export of treasure to India.[2]

The factors for the decline and disruption of Arabian Sea trade seem many. The emergence of the English port of Bombay with a direct trade through the Cape of Good Hope with little scope for Asian merchants too contributed to the decline.

However, according to Ashin Das Gupta the eclips was a result of the collapse of three great Empires which were earlier responsible for the flourishing trade. The Ottomans, the Safavids and the Mughal Empires fell and alongwith them declined the Arabian trade.[3]

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1. Cambridge Economic History of India, 1, p.430.
2. English Factories in India, 1678-84, pp. 307, 329.
3. Proceedings of Indian History Congress, 35th Session, p.109.

B I B L I O G R A P H Y

ARABIC SOURCES

1. Abu Ali Ahmad Bin Umar Bin Rusta, Kitab al-Alaq an-Nafisa, Leiden, 1891, vol. 7.

2. Ibn-al Nadim, Al-Fihrist, Al-Maktabat-ur Rahmania, Cairo.

3. Idrisi, et al., Hindustan Arabon Ki Nazar Men (a collection of extracts translated from Arabic sources in Urdu), tr. Ziauddin Islahi, Azamgarh, 1962.

4. Idrisi (Fl. 1152 AD), Kitab Nuzhat-al Mushtaq fi Khatiraq, tr. S.Maqbul Ahmad, India and the Neighbouring Territories, Leiden, 1960.

5. Ibn Jubyr, The Travels of Ibn Jubyr (a 12th Century chronicle of a Medieval Spanish Moor), tr. R.J.C. Broadhurst, London, 1951.

6. Ibn Khaldun, The Muqaddamah, tr. F.Rosenthal, New York, 1958, vol. II.

7. Hamd Allah Mustawfi, Nuzhat-al Qulub, tr. G.Le Strange, London, 1919.

8. Qasim Abdullah Kashani (some times after 1301 AD), Arais-ul Jawahir wa Nafis-ul Ataib, Tehran, 1345 AH.

9. Ibn Battuta, Rihla, Travels in Asia and Africa : 1325-1354, tr. H.A.R.Gibb, London, 1963; also portion relating to India tr. Mehdi Husain, The Rehla of Ibn Battūta, Baroda, 1976.

10. Muinuddin Abul Qasim Junaid Shirazi, Shadd-ul Azar fi hatt-il Auzar a'n Zawwa 'ril Mezar (a 14th century work in Arabic) ed. Muhammad Qazwini and Abbas Iqbal, Tehran, 1328 AH.

11. Taqi El-Din Ahmad Ali Ibn Abd al-Qadir Ibn Muhammad El-Maqrizi (1364-1442 AD), *Kitab El-Mawariz wa- al Itibar fi Dhikr-El Khitat wa-al Athar*, ed. M.Gaston Wiet (Memoirs published by the members of the Institute of French Oriental Archaeology of Cairo), Cairo, 1911.

12. Ahmad Ibn Ali Al-Maqrizi, *Kitab-al Suluk Lema'rifat Dowal-al Muluk*, ed. Mohammad Mustafa Ziadh, Cairo, 1956, vol. I, No.1.

13. Ahmad ibn Majid al-Najdi, *Kitab-al Fawa'id fi usul-il Bahr wa'l Qawa'id*, tr. G.R.Tibbets, *Arab Navigation in the Indian Ocean Before the Coming of the Portuguese*, London, 1971.

14. Abdullah Muhammad al-Makki al-Asafi al-Ulugh Khani Haji ad-Dabir, *Zafar-ul walih bi Muzaffar wa Alih*, tr. M.F.Lokhandwala, *An Arabic History of Gujarat*, Baroda, 1970, 1.

15. Elliot and Dowson, *The History of India As Told By Its Historians (Muhammadan Period)*, Delhi,1.

16. Al-Qalqashandi, *Subh-ul Asha*, Cairo, 1914, 3. English tr. Otto Spies, n.d.

17. Alberuni, *Kitab-ul Jamahir fi Ma'rifat-il Jawahir*, Hyderabad, 1355 AH.

18. Alberuni, *Kitab-us-Sadna*, Persian tr. Iran, 1959; English tr. Hakim Muhammad Sa'id, Karachi, 1973.

19. *Al-Beruni's India*, ed. E.C. Sachau, Reprint, Delhi, 1964.

20. Abu Mansur Ali Harvi, *Kitab-ul Abnia-an Haqaiq-il Adnia*, Tehran, 1163 AH.

21. Al-Umari, Masalik-ul Absar fi Mamalik-il Amsar, tr. I.H. Siddiqui and Qazi Muhammad Ahmad, Aligarh, 1971.

22. S.Maqbul Ahmad, 'Abul Fida's Description of India' (Hind and Sind), Medieval India Quarterly, 1957, vol. II Nos. 1-2.

PERSIAN SOURCES

23. Abul Fazl, Akbar Nama, Nawal Kishore, Lucknow, 1881-83.

24. Abul Qasim Farishta, Gulshan-i Ibrahimi or Tarikh-i Farishta, Nawal Kishore, Kanpur, 1874.

25. Rashid-ud Din Fazlullah, Makatibat-i Rashidi (collection of letters) ed. Mohammad Shafi, Lahore, 1945.

26. Fazlullah bin Abdullah Shirazi 'Wassaf', Tarikh-i wassaf, Bombay, 1261 AH.

27. Muhammad Kazim, Alamgir Nama, ed. Maulavis Khadim-i Husain and Abdul Hai, Bib. Ind., Calcutta, 1868-73.

28. Ali Muhammad Khan, Mirat-i Ahmadi, ed. Syed Nawab Ali, Calcutta, 1930.

OTHER ASIAN SOURCES

29. Thomas Watters, On Yuan Chwang's Travels in India, Delhi, 1961.

30. Chau Ju-Kua, Chu Fan-Chi, tr. and annotated F. Hirth and W.W. Rockhill, St. Petersberg, 1912.

31. Sources of Vijayanagar History, ed. S.Krishnaswami Ayyangar, Madras, 1919.

32. Travellers' Accounts, tr. R.H.Major, India in the 15th Century, Delhi, 1974.

PAINTINGS

33. Hamzanama of Akbar's Court, Vienna Museum.

34. Paintings of Jahangir's Time (c.1650), Sir Cowasji Jahangir Collection, Bombay.

35. W.G, Archer, Indian Miniatures, Greenwich, Conecticut, 1960.

36. F.R. Martin, The Miniature Painting and Painters of Persia, India and Turkey, London, 1912.

37. E. Blochet, Musalman Painting (xiith-xviii century), London, 1939.

38.

EUROPEAN SOURCES

38. Classical Accounts of India, tr. ed. R.C.Majumdar, Calcutta, 1960.

39. Anonymous, The Periplus of the Erythraean Sea, tr. W.H. Schoff, Delhi, 1974.

40. Marco Polo, The Travels of Marco Polo, ed. Manual Komroff, New York, 1930.

41. The Travels of Marco Polo, ed. Mitton Rugoff, London, 1961.

42. Marco Polo, illustrated, Richard Humble, London, 1975.

43. The Pilgrimage of Arnold Von Hwyf (1496-1499), tr. M.Letts, Hakluyt Society.

44. Three Voyages of Vasco da Gama, tr. J.Stanley, Hakluyt Society

45. The Voyage of Pedro Alvares Cabral to Brazil and India (from contemporary Documents and Narratives), tr. William Brooks Greenlee, Hakluyt Society.

46. The Travels of Ludonicodi Varthema, tr, J.W. Jones, ed. Sir Richard Carnac, London, 1928.

47. The Suma Oriental of Tom Pires (An account of the East, from the Red Sea to Japan, written in Malacca and India in 1512-1515), tr. Armando Cortesao, London, 1944, Hakluyt Society, 2 vols.

48. Duarte Barbosa, The Book of Duarte Barbosa, tr. Mansel Longworth Dames, London, Hakluyt Society, 2 vols.

49. Cathay and the Way Thither, Hakluyt Society, ed. Henry Yule, Vol. III.

50. Voyages and Travels, mainly during the 16th and 17th century, Intro. C.R.Beazley, Westminister, 1903.

51. Samual Purchas, Hakluytus Posthumus or Purchas His Pilgrims, Glasgow, 1907, 20 vols.

52. Letters Received by the East India Company from its Servants in the East, 1602-17, 6 vols., vol. 1 ed. Danvers; Vols. 2-6, ed. W.Foster, London, 1896-1902.

53. The English Factories in India, ed. W.Foster, Oxford 1906-27, 13 vols.

54. Francisco Pelsaert, Remonstrantie (c.1626), tr. W.H. Moreland and P. Geyl, Jahangir's India, Cambridge, 1925.

55. Francisco Pelsaert, Jahangir's India, tr. W.H. Moreland and P.Geyl, Reprint, Delhi, 1972.

56. Mandelslo's Travels in Western India (AD 1638-39), Bombay, 1931.

57. J.B. Tavernier, Travels in India, tr. V.Ball, London, 1889, 2 vols.

58. Jean de Thevenot, Account of India, in Indian Travels of Thevels Thevenot and Careri, tr. & ed. S.N. Sen, New Delhi, 1949.

59. John Marshall in India, Notes and Observations in Bengal, 1668-72, London, 1927.

60. The Travels of The Abbe Carre in India and the Near East, 1672-1674, tr. Lady Fawcett, ed. Sir Charles Fawcett and Richard Burn, Hakluyt Society, London, 1947-48, 3 vols.

MODERN WORKS

61. Abu Zafar, Gujarat Ki Tamadduni Tarikh (Urdu), Azamgarh, 1962.

62. Adam Mez, Renaissance of Islam (translation from the German) tr. S.Khudabakhsh and D.S. Margolioth, Delhi, 1979.

63. Ahmad, S.Maqbul, Indo-Arab Relations, Bombay, 1969.

64. Ahmad, S.Maqbul, "Arabic Source Materials on Indo-Arab Relations", Medieval India Quarterly, 1957-58.

65. Alvi, S.M. Ziauddin, "Arab Exploration During The 9th & 10th Centuries AD", Islamic Culture, July, 1948.

66. Appadorai, A., Economic Condition in Southern India (100-1500 AD), Madras.

67. Armstrong, R., A History of Seafaring, London, 1968, vol.2.

68. Ashraf, K.M., Life and Conditions of the People of Hindustan, Delhi, 1959.

69. Ashtor, E., A Social and Economic History of the Near East in the Middle Ages, London, 1976.

70. _Barthold's Iran_, tr. G.K.Nariman, ed. Minocher E.Dodrawala, Bombay.

71. Basham, A.L., _Studies in Indian History and Culture_, Calcutta, 1964.

72. Belgrave, Sir Charles, _The Pirate Coast_, London, 1966.

73. Bovill, E.W., _The Golden Trade of the Moors_, London, 1968.

74. Bowen, C., _Ship For All_, London, 1952.

75. Boxer, C.R., _The Portuguese Seaborne Empire (1415-1825)_, London, 1969.

76. Braudel, F.R., _Mediterranean and the Mediterranean world in the Age of Philip II_, London, 1972-73, 2 vols.

77. Braudel, F.R. & Spooner, F., 'Prices in Europe from 1450 to 1750', _The Cambridge Economic History of Europe_, ed. C.Rich and Wilson, vol. 6.

78. _Cambridge Economic History of India_, ed. Tapan Raychaudhuri and Irfan Habib, Cambridge, 1982, vol.I.

79. _Cambridge History of Iran_, ed. J.A.Boyle, Cambridge Universit Press, 1968, vol.5.

80. Chakraborti, H., _Trade and Commerce in Ancient India (c. 200 BC - c.650 AD)_, Calcutta, 1966.

81. Cipola, C.M., _Guns and Sails in the Early Phase of European Expansion (1400-1700)_, London, 1965.

82. _Early History of the Deccan_, ed. Ghulam Yazdani, London, 1960.

83. Fahmy, A.M., _Muslim Sea Power in the Eastern Mediterranean_ Delhi, 1966.

84. Forbes, R.J., Studies in Ancient Technology, Leiden, 1964, vol. 1, (Sc. ed.).

85. Gazetteer of Bombay City and Island, Bombay, 1902.

86. Gazetteer of Bombay City and Island, Bombay, 1909.

87. Glamann, K., The Dutch Asiatic Trade, Hague, 1954.

88. Goitein, S.D., "New Light on the Beginning of the Karim Merchants", JESHO, Leiden, 1958.

89. Goitein, S.D., Studies in Islamic History and Institutions, Leiden, 1966.

90. Gopal, L., "Art of Shipbuilding and Navigation in Ancient India", Journal of Indian History, 1962.

91. Gopal, L., The Economic Life of Northern India (c.700-1200), Delhi, 1965.

92. Griffiths, M., 'Shipbuilder', Man, London, 1973.

93. Gupta, A.Das, "Presidential Address Medieval Section", Proc. I.H.C., Jadavpur (Calcutta) Session 1974.

94. Gupta, A.Das, Indian Merchants and the Decline of Surat 1700-1750, Weisbaden, 1982.

95. Habib, Irfan., 'Presidential Address Medieval Section', Proc. I.H.C., Varanasi, Session 1969.

96. Habib, Irfan, "Technology and Economy in Mughal India", IESHR, vol. 17 No.1, 1980.

97. Hasan, Hadi, A History of Persian Navigation, London, 1928.

98. Hitti, P.K., History of the Arabs, London, 1961.

99. Hourani, G.F., Arab Seafaring in Ancient and Early Medieval Times, Princeton, 1951.

100. Hunter,W.W., The Indian Empire, London, 1928.

101. Islam and the Trade of Asia, ed. D.S.Richards, Oxford, 1970.

102. Kail, Owen C., "Dutch Commercial and Territorial Influence in India", JASB, vols. 43-44, 1968-69 (New Series).

103. Kennedy, E.S., A Commentary Upon Beruni's Kitab-al Amakin (as 11th century treatise on mathematical geography), Beirut, 1931.

104. Kieniewicz, Jan, "The Portuguese Factory and Trade in Pepper in Malabar During the 16th century", IESHR, vol.6 No.1, 1969.

105. Kulshreshtha,S.S., The Development of Trade, Allahabad

106. Lach, D.F., India in the Eyes of Europe, Chicago, 1965.

107. Lal, K.S., Twilight of the Sultanate, Calcutta, 1963.

108. Lane, Frederic C., "The Mediterranean Spice Trade: Its Revival in the 16th Century", Venice and History, Baltimore, 1966.

109. Lethbridge, T.C., 'Shipbuilding', A History of Technology, ed. Charles Singer and others, Oxford, 1956, vol. II.

110. Leur, J.C. Van, Indonesian Trade and Society, Hague, 1955.

111. Lewis, A., "Maritime Skill in the Indian Ocean", JESHO, Vol. 16 No.1, 1973.

112. Margolioth,D.S., "The Renaissance of Islam", Islamic Culture, April, 1933.

113. Mookerji, R.K., Indian Shipping, Orient Longman, 1957.

114. Moreland, W.H., "Ships of the Arabian Sea About AD 1500", JRAS , Nos. 1-2, 1939.

115. Moreland, W.H., From Akbar to Aurangzeb, New Delhi, 1972.

116. Moreland, W.H., India at the Death of Akbar, New Delhi, 1981.

117. Nadvi, Ismai, Tarikh-us Silat Bain-al Hind wal Bilad-il Arabia, Beirut.

118. Nadvi, S.Sulaiman, "Commercial Relations of India with Arabia", Islamic Culture, April, 1933.

119. Nadvi, S.Sulaiman, "Muslim Colonies in India Before the Muslim Conquest", Islamic Culture, July, 1934.

120. Nadvi, S.Sulaiman, "Muslim Colonies in India Before the Muslim Conquest", Islamic Culture, July, 1935.

121. Nadvi, S.Sulaiman, "Some Indian Astrolable Makers", Islamic Culture, October, 1935.

122. Nadvi, S.Sulaiman, Arabon Ki Jahazrani (Urdu), Azamgarh, 1935.

123. Nadvi, S.Sulaiman, Indo-Arab Relations, tr. M. Sal[illegible], [illegible]

124. Needham, Joseph, Science and Civilization In China, Cambridge, 1971, vol.4 No.3.

125. Panikkar, K.M., Asia and Western Dominance, London, 1953.

126. Panikkar, K.M., A History of Kerala, The Annamalai University, 1960.

127. Pant, D., The Commercial Policy of the Mongols, Bombay, 1930.

128. Persad, P.C., Foreign Trade and Commerce in Ancient India, New Delhi, 1977.

129. Partington, J.R., Origin and Development of Applied Chemistry, London, 1935.

130. Pearson, M.N., Merchants and Rulers in Gujarat, Delhi, 1976.

131. Pearson, M.N., Coastal Western India, New Delhi, 1981.

132. Piggot, Stuart, Pre-Historic India to 1000 BC, London, 1961.

133. Pirenne, Henri, Mohammad and Charlemagne, Meridian Books.

134. Qaisar, A.J., "Shipbuilding in the Mughal Empire During the 17th Century", IESHR, 1968, vol.5, No.2.

135. Ray, P., History of Chemistry in Ancient and Medieval India, Calcutta, 1956.

136. Raychaudhuri, Tapan, Jan Company in Coromandal, Martinus Nijhoff, 1962.

137. Roper, Trevor, Historical Essays, New York, 1966.

138. Rostovtzeff, M., Social and Economic History of the Roman Empire, Oxford, 1926.

139. Saunders, J.J., A History of Medieval Islam, London, 1972.

140. Sewel, Robert, A Forgotten Empire - Vijayanagar, London, 1924.

141. Sharma, R.S., Indian Feudalism C.300-1200 AD, Calcutta, 1965.

142. Simkin, C.G.F., The Traditional Trade of Asia, London, 1968.

143. Steengaard, N., The Asian Trade Revolution of the Seventeenth Century, Chicago, 1974.

144. Stillman, Norman A., "The Eleventh Century House of Ibn Awkal (A Geniza Study)", JESHO, April, 1973.

145. Studies in the Economic History of the Middle East, ed. M.A.Cook, London, 1970.

146. Tirmizi,S.A.I., Some Aspects of Medieval Gujarat, Delhi,1968.

147. Tragic History of the Sea 1589-1622, ed. C.R.Boxer, Cambridge University Press, 1959, Hakluyt Society (Editor's introduction used).

148. Wallerstein,I., The Modern World System, New York, 1974

149. Warmington,E.H., The Commerce Between the Roman Empire and India, Delhi, 1974.

150. Watson, Col. J.W., History of Gujarat, Bombay, 1886.

151. Wheeler, S.M., The Indus Civilization, Cambridge, 1968.

152. Whiteway, R.S., The Rise of Portuguese Power in India (1497-1550), White Hall Garden, 1899.

153. Wynter and Turner, Scientific Instruments, London, 1975

DICTIONARIES AND ENCYCLOPAEDIAS

154. F. Steingass, A Comprehensive Persian-English Dictionary, New Delhi, 1973.

155. Henry Yule and A.C.Burnell, Hobson - Jobson (A Glossary of Anglo-Indian Colloquial Words and Phrases and of kinderd terms), ed. William Crooke, London, 1903.

156. Oxford English Dictionary, Vol.2, Oxford, 1933.

157. Encyclopaedia Biblica, vol.5, London, 1899.

158. Encyclopaedia of Islam, both the first and the new editions, Leiden.